Usenet Newsgroup Archive: rec.radio.amateur.homebrew

1994

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Date span: 1994-01-01 through 1994-12-31

Source text: rec.radio.amateur.homebrew.txt

Source item: https://archive.org/details/usenet-rec

Messages included in this PDF: 4,061

Message records with no readable body available in the source text: 20

Messages are presented chronologically by archived date.

Binary or encoded payloads are not printed as blocks of encoded text; a placeholder appears where such material was detected. The original source text is unchanged.

1. HELP - Need Mot MOCOM 70 info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 00:44:34 UTC
From: landisj@drager.com
Message-ID: <00977D8FECCD9380.24E0F3DA@drager.com>
Source record: 118940

Anybody have any sources for Motorola manuals for the MOCOM 70 Model number U33BBA1000A mobile transciever? Any conversion info?

Thanks in advance
Joe - AA3GN
--
Joe Landis - Systems/Network Mgr.
North American Drager, Telford, PA

2. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 01:43:41 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2g2kgd$ib4@hpscit.sc.hp.com>
Source record: 118941

In article <757355492snx@skyld.tele.com>,
Jeffrey D. Angus <jangus@skyld.tele.com> wrote:
>
>Doesn't anyone read books any more?
>Doesn't anyone go the the library and look for something themselves?
>Doesn't anyone look in technical publications for information?
>
>What is it about the internet that seems to breed the following attitude?
>
> "I don't want to expend the effort to
> look so can someone else do it for me?"
>
>Along a similar thread, how is it that no one seems to think of the
>manufacturers as a source of information?

I assume this is in reference to the fellow from Singapore who
asked about the XR2211. You basically have it right. The EXAR
data book pretty much will tell him everything there is to know about
the 2211 including in-what-way it is better than the NE567.
Having studied this area extensively, I can also say that I don't
know of anything better than the 2211 for *normal* FSK. Note
that ham radio uses wide-shift FSK, which is a special case.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

3. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 02:00:17 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2g2lfh$a5@usenet.INS.CWRU.Edu>
Source record: 118942
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

The preceding article "Looking for information" is flame-bait. Maybe I am thinking wishfully, but it would be nice if we could keep responses in e-mail rather than watching another silly flame war erupt over nothing. Thanks...

Stephen

--
Stephen Trier KB8PWA
Work: trier@ins.cwru.edu
Home: sct@po.cwru.edu

4. QRP Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 03:41:44 UTC
From: Don.Waybright@f177.n264.z1.fidonet.org
Message-ID: <757959931.AA04531@rochgte.fidonet.org>
Source record: 118798

Does anyone know a where to find a good source for QRP rig designs? I had a few here but they have disappeared.

Rds,
-=Don=-

5. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 03:46:18 UTC
From: dmiller@crl.com
Message-ID: <2g2rma$544@crl2.crl.com>
Source record: 118943

Jeffrey D. Angus (jangus@skyld.tele.com) wrote:

: Doesn't anyone read books any more?
: Doesn't anyone go the the library and look for something themselves?
: Doesn't anyone look in technical publications for information?

No flame here, but please consider the following:

As a practicing engineer, I find that I can pretty well get whatever information I want by calling a vendor and requesting catalogs or ap notes. Before college, however, information was not that easy to come by. I would not have known how to obtain an Exar data book, for example. Hell, parts were a problem too. I remember pulling resistors out of scrap television sets.

: Are you people really that cheap, lazy or stupid?

Hmmmm..."You people"... what a generality! If that is your impression of the subscribers to this group, feel free to go elsewhere. Consider that the first-time experimenter may want to try out a simple project before he sinks his moola into databooks or the ARRL tome. The local library may not have the databooks he needs.
I have never purchased a component data book in my life (although I do buy the ARRL handbook every few years.) I get them for free. Many times my old ones find homes with budding experimenters. The Heathkit/Lafayette era is gone: homebrewing is almost dead and I feel it needs to be nurtured. I for one will continue to read the messages with titles like: Need help...--You, of course are free to skip them!

: Not that the ARRL amateur radio handbook is the be all to end all,
: but it is two inches thick for a reason. Likewise, QST is loaded
: full of advertisements. (As several others complain about.)

These are valid points, but don't you remember ever getting enthused about a project and wanting the answer NOW? Of course, it is possible to go to the library and get the information in the next day or two, but the net environment is such that someone might have an answer for you in a few hours! Of course, anyone really into the hobby will want a copy of the ARRL handbook, but someone just starting to dabble may bawk at the $25 price tag.

: Dialing 411 (In the US) gets you directory assistance.
Dialing
: 1 (area code) 555-1212 gets you directory assistance for any other
: area code. Dialing 1 800 555-1212 gets you the free number directory
: assistance for those of you too cheap to call someone direct.

What if you don't know the area code? :)

: Now I know there are a lot of obscure technical aspects to amateur
: radio, but geeze people. Get off of your tail ends and look around
: a bit before you waste every one elses time.

Jeff, of course all your points are valid in various degrees, but
try to be a bit more of an Elmer, huh?

: the remark of wasting my time, consider this, I don't think there are
: any stupid questions. But there sure are a lot of unnecessary ones.

Yeah, I'm a Staff Engineer for a Consumer Giant that hires some
engineering fresh-outs from time to time. Not a day goes by that I don't
have similar thoughts. There are many other resources available besides
me for their questions, but it is probably good old human nature that
makes one search the path of immediacy -- sometimes they will be forced
to use the other avenues however -- No matter how many years I practice
engineering the answer is sometimes " I don't know".

73's Don Miller KM4AS dmiller@crl.com

6. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 13:20:32 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan1.132032.7474@ke4zv.atl.ga.us>
Source record: 118945

In article <2g2kgd$ib4@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>Having studied this area extensively, I can also say that I don't
>know of anything better than the 2211 for *normal* FSK. Note
>that ham radio uses wide-shift FSK, which is a special case.

We do? I thought 170 Hz was considered narrow shift.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

7. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-01 20:21:54 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2g4m12$1c3@hpscit.sc.hp.com>
Source record: 118946

In article <1994Jan1.132032.7474@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>In article <2g2kgd$ib4@hpscit.sc.hp.com> rkarlqu@scd.hp.com
(Richard Karlquist) writes:
>>Having studied this area extensively, I can also say that I don't
>>know of anything better than the 2211 for *normal* FSK. Note
>>that ham radio uses wide-shift FSK, which is a special case.
>
>We do? I thought 170 Hz was considered narrow shift.
>
>Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary

Hams call 170 Hz. "narrow" shift I guess because it is narrow
compared to 850 Hz. shift. That shift was chosen to comply with
FCC regulations forbidding more than 1 kHz. shift. Outside of
the ham community, I don't know of anyone using shifts of more
than 1.5 times the baud rate. A shift of about .8 times the baud
rate is optimum in a bit error rate vs. energy per bit sense.
For 5-bit 60 WPM ham RTTY, the baud rate is only 45.45 baud.
This would imply a shift of 35 to 70 Hz. or so. 170 Hz. is so
wide compared to this that for optimum bandpass filtering, you
need to filter the mark and space frequencies separately and
reject the noise in between. The XR2211 doesn't lend itself to
this scheme.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

8. Re: Crystal Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-02 07:51:37 UTC
From: edw@sequent.com
Message-ID: <1994Jan2.075137.20733@sequent.com>
Source record: 118947

Some of the best fun can be had by refering to an
old cub or boy scout manual.

Many Moons ago, I made a xtal rcvr completely from scratch
CAps from wax paper and foil, resister from pencil lead,
and so on.

Sometimes the simple pleasures are the best
Ed
--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q anybackbone!sequent!edw edw@sequent.COM KA9AHQ 28.340

9. Re: - - television disruptor - -

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-02 07:54:42 UTC
From: edw@sequent.com
Message-ID: <1994Jan2.075442.20791@sequent.com>
Source record: 118949
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.video

In article <2fjmit$8pi@elroy.jpl.nasa.gov> chu@bondi.jpl.nasa.gov (Eugene Chu) writes:
>quixote@eskimo.com (Looking for Sancho) writes:
>
>> The intended use of this device is to be put with a timer
>> against the wall where my new neighbor has his television set.
I have an RF signal gen that works wonders.
Little twin lead dipole..... Hit the IFs ! :-)
In later years, the children's rap station somehow had problems as well :-)
They now listen to Rock & Roll, and the sig gen gathers dust.
Just Do It !
Ed
--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^⌿ ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q anybackbone!sequent!edw edw@sequent.COM KA9AHQ 28.340

10. Re: Low Budget CB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-02 08:01:45 UTC
From: edw@sequent.com
Message-ID: <1994Jan2.080145.21012@sequent.com>
Source record: 118948

In article <DEAN.93Dec31171923@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:
>Hi:
> I'm in the market for an inexpensive CB to start in this hobby. Anything out there for sale?
>
>-Dean
This should cost you between $540 and $590 USD
Thats $40 to $90 at any drug store, or radio shack,
and $500 for the Lobotomy so you can fit with the crowd.
Yeah Yeah, I know its flame bait.
My CB has been in the attic for years I wish it were a
usable band (again {KKI4758 I think})

so here you go :-) now put those flamethrowers away.

Ed

--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^≠ ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q anybackbone!sequent!edw edw@sequent.COM KA9AHQ 28.340

11. Re: Charging Deep-Cycle Batteries from Automobile

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-02 23:29:58 UTC
From: smj@netcom.com
Message-ID: <smjCJ0zxz.G2o@netcom.com>
Source record: 118950

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: or leak. The *really* good batteries are the traction gel cells,
: but they are still seriously expensive. The 26 used in the GM

KMART sells the (exide) Nautilus Mega Cycle, a deep-cycle Marine battery with fully gelled electrolite, for $99. It is designed to be charged by a normal (NOT deep-cycle) charger of not more than 14.5v. It claimes that it can be fully discharged and left that way for up to one month, and still be fully recharged. They even claim that it will operate fully submerged.

-smj

12. TrakBox panel layout

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 04:57:27 UTC
From: fmitch@netcom.com
Message-ID: <fmitchCJ1F3s.Iqx@netcom.com>
Source record: 118951

this is a generic reply to all email in response to my trakbox panel
layout post to the usenet and i am also posting this msg on compuserve...

the panel layout is enclosure specific for the Bud LB-1663 Contempo
box... this box is a 'ten-tec' type box, gray in color with black plastic
side panels, with the following dimensions:

3 1/4" high
7 1/32" wide
7 3/16" deep

the box is a mite too small for the pcb to fit into the pcb grooves molded in
the plastic side panels, therefore you have to *trim* the printed circuit
board by about 3/16 ths of an inch... this is easily done with a hand file...
it is *much* easier to do if you haven't populated the board... if you
don't want to trim your pcb you can still use the layout as an
example of "how to do it"...

the current layout is for the switches furnished with the first batch of kits...
the second batch of kits is currently being 'kitted'... the satellite
selector switch for the second batch of kits will be a thumbwheel type...
i am being loaned one of the new type switches and will modify the panel
layout to accomodate either switch...

i will be posting the corel draw file and also a gif file to compuserve as soon
as we have the layout modified for the new type selector switch... (if anyone
needs a different file type please let me know... i can furnish any file type
supported as an export file from corel draw 3) ... look for
a filed named tboxpanl.zip or something similar... a warning on the
gif file --- it looses much detail, and is only useful for you to grab a
quick peek at the layout...

i am looking for a ftp site to upload the files for internet access, any
suggestions for a public accessable location will be appreciated...

if you need the files directly, you can download the zip file from
my data line, see below, or send me a blank, *formatted* disk of any
flavor, along with return postage... i will dump the files on your disk and
mail them back to you...

thanks,
mitch, wa4osr
usnail: felton mitchell, 11 midtown park, e., mobile, al 36606 usa
packet: WA4OSR@W4IAX.#MOBAL.AL.USA.NA
internet: fmitch@netcom.com
landline: 205-342-7259 home, 205-476-4100 work, 205-476-0465 fax
205-342-4073 data

--
---
fmitch@netcom.com
Felton "Mitch" Mitchell, WA4OSR in Mobile, Alabama USA
205-342-7259 home, 205-476-4100 work, 205-476-0465 FAX
co-sysop for W4IAX bbs running fbb ... sysop for WA4OSR DXCluster in Mobile..
---

13. Wanted : RF Selfs design formulae

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 09:27:08 UTC
From: elendir@enst.fr
Message-ID: <2g8odc$9fr@cismsun.univ-lyon1.fr>
Source record: 118952

Hello.

I am looking for RF selfs design formulae. While I have some, like the Nagaoka (?), they are not useful in the UHF range. I am especially interested in knowing how to compute the self of a lone silver-layered copper wire, like those found in RF tuners. Can someone help me ?

Thanks.

Vince (Still waiting for my ticket, one month and a day...)

--

14. Re: Wanted : RF Selfs design formulae

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 16:12:23 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2g9g57$383@hpscit.sc.hp.com>
Source record: 118953

In article <2g8odc$9fr@cismsun.univ-lyon1.fr>, <elendir@enst.fr> wrote:
> Hello.
>
> I am looking for RF selfs design formulae. While I have some, like the
>Nagaoka (?), they are not useful in the UHF range. I am especially interested
>in knowing how to compute the self of a lone silver-layered copper wire, like
>those found in RF tuners. Can someone help me ?
>
> Vince (Still waiting for my ticket, one month and a day...)

You want to know how to compute the self-resonant frequency of a coil?
("RF selfs"?). The self-resonant frequency will never be higher than
the frequency where the length of the wire is a quarter-wavelength.
Self supporting air wound coils with turns spaced a wire diameter
apart may actually approach this limit. Close wound coils and those
wound on forms will run roughly half this frequency.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

15. Re: Wanted : RF Selfs design formulae

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 16:25:17 UTC
From: elendir@enst.fr
Message-ID: <2g9gtd$iko@cismsun.univ-lyon1.fr>
Source record: 118954

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: In article <2g8odc$9fr@cismsun.univ-lyon1.fr>, <elendir@enst.fr> wrote:
: You want to know how to compute the self-resonant frequency of a coil?
: ("RF selfs"?). The self-resonant frequency will never be higher than

Oops. Forgive my rough English. By selfs I meant coils (self-inductances).
I just transposed the French word into English, but it seemed to be a bad
idea :-)

So, there it is back : "Do you know of any formula to compute coils at UHF
frequencies, especially those coils made of a single piece of copper wire".

Thanks and excuse me for the mistake.

Vince.

16. Re: Looking for information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 17:06:41 UTC
From: c2xjcb@kocrsv01.delcoelect.com
Message-ID: <1994Jan3.170641.2328@kocrsv01.delcoelect.com>
Source record: 118956

In article <2g2rma$544@crl2.crl.com>, dmiller@crl.com (Donald J. Miller) writes:

> Hell, parts were a problem too. I remember pulling resistors out of scrap
> television sets.
>

I remember needing large amounts of resistors, caps, and pots for some projects I did in high school and college; got most of them "free for the asking" from the manufacturer. In fact, I once got a free transformer custom-wound for me (wanted dual secondaries, center-tapped each, one for a +/-5V supply and one for a +/-12V supply, of substantial current capability)! Tactic was simple:

"To: Marketing Department
XYZ Corp.
WhoKnowsWhere, USA

Dear Sir/Madame:

I am a (college or high school) student working on an electrical engineering project relating to . . . .

I am in need of some components which your company manufactures:

. . . . .
. . . . .
. . . . .

Any help would be greatly appreciated.

Thanx,

Joe Blow"

For one project I needed a BUNCH of 1% resistors; sent letters to 2 vendors, got parts from BOTH (had my pick of carbon comp or metal film, guess which I chose)!

Remember:
IT NEVER HURTS TO ASK!
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Powertrain Strategy Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

17. U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 17:48:33 UTC
From: mb@xmb
Message-ID: <2g9lph$jk7@titan.wordperfect.com>
Source record: 118955

I'm gathering the parts for a 2-meter vfo. One of the transistors is a U310 n-channel jfet. I've looked through my DigiKey and Mouser catalogs, along with catalogs from smaller suppliers, without finding it. Can anyone point me to a source for this device? Is this really a valid part number?

--
Michael Bendio WT7J mb@titan.wordperfect.com 801 222-5367
Opinions are my own and aren't necessarily shared by Wordperfect Corporation

18. Re: Wanted : RF Selfs design formulae

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 19:19:55 UTC
From: ab268@FreeNet.Carleton.CA
Message-ID: <CJ2J17.A6o@freenet.carleton.ca>
Source record: 118957

In a previous article, elendir@enst.fr () says:

> I am looking for RF selfs design formulae. While I have some, like the
>Nagaoka (?), they are not useful in the UHF range. I am especially interested
>in knowing how to compute the self of a lone silver-layered copper wire, like
>those found in RF tuners. Can someone help me ?
>

Wire parallel to infinite Ground Plate

The impedance is

Z0 ~= 138 * log (D/d) where d is the diameter of the wire,
and D is the height above the ground
log in base 10

Now find the line length that will resonance with C at Fequency f

Length= (waveleght/(2*pi))* arctan(1/(Z0*2*pi*f*C))
where wavelength = Speed of light / f
C is the capacitance

Example:

A #20 AWG wire is 0.25" above ground will be resonated with
a 10 pf capacitor. The operationg fequency is 433 MHz.
What is the require leghth of the wire ?

Answer is = 3.2 cm or 1.25"

0.032" is d for #20 AWG
Z0 is 123 ohms

<------ 3.2 cm ---------> 10pF

---------------------------||-
| | ^
| | 0.25"
== Ground

In TV turner, they use square box surround the wire,
the equation for the square coaxial is

Z0 ~= 138 log (1.178 * D / d)

Ref: VHF/UHF Manual by G.R.Jessop G6JP
Published by RSGB

NOW: Can someone tell me how to tap the wire for for 50 ohms point ?

Ying VE3FUB
--
Ying Hum ~{L7S"G? dWL+;*#,<SDC4s~}
ab268@freenet.carleton.ca

19. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 19:21:17 UTC
From: gay@selkirk.sfu.ca
Message-ID: <gay.757624877@sfu.ca>
Source record: 118958

mb@xmb (0000-Admin(0000)) writes:

>I'm gathering the parts for a 2-meter vfo. One of the transistors is a
>U310 n-channel jfet. I've looked through my DigiKey and Mouser catalogs,
>along with catalogs from smaller suppliers, without finding it. Can anyone
>point me to a source for this device? Is this really a valid part number?

It's a Siliconix part. I think J310 is the same thing in a plastic
package, if you don't need the metal can.

>--
>Michael Bendio WT7J mb@titan.wordperfect.com 801 222-5367
>Opinions are my own and aren't necessarily shared by Wordperfect Corporation

20. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 20:30:06 UTC
From: alanb@sr.hp.com
Message-ID: <CJ2MA7.EDw@srgenprp.sr.hp.com>
Source record: 118959

Scott Dorsey (kludge@grissom.larc.nasa.gov) wrote:
: In article <gay.757624877@sfu.ca> gay@selkirk.sfu.ca (Ian D. Gay) writes:
: >mb@xmb (0000-Admin(0000)) writes:
: >
: >>I'm gathering the parts for a 2-meter vfo. One of the transistors is a
: >>U310 n-channel jfet.
: >
: >It's a Siliconix part. I think J310 is the same thing in a plastic
: >package, if you don't need the metal can.

Correct

: Is it my imagination, or is the noise on the plastic packages much higher
: than the metal can equivalents?

I think it's your imagination. I can imagine that the plastic case could possibly cause increased 1/f noise (low-frequency) due to surface contamination, but at VHF frequencies, the performance should be the same.

AL N1AL

21. Re: Two meter monitor from NEW Radio Shack WX cube?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 21:26:50 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-030194162650@k4dii.ksc.nasa.gov>
Source record: 118960

In article <2fegp2$bbu@charm.magnus.acs.ohio-state.edu>,
wvanhorn@magnus.acs.ohio-state.edu (William E Van Horne) wrote:
> >Several years ago they used to have a weather cube that
> >you could modify to serve as a dedicated monitor for one
> >or two frequencies on the two meter band (I think the
> >mod was in QST, anyone know the year and issue?) I'm pretty
> >sure it was just a trivial modification too (add a capacitor
> >and tune it??)
> The article was in HAM RADIO, May, 1973, p. 76. I got this
> info from the index by Didah Publishing. I don't have a copy
> of the mag.

Van-

I had one of the early Weather Cubes from Radio Shack. They were very simple VHF receivers, with a variable-frequency local oscillator. If you had the appropriate plastic alignment tool, it was simple to re-tune the osillator and antenna coils to work on Two Meters. However, they were lousey receivers.

If there is a NEW Weather Cube, it may be crystal-controlled like the other more recent weather receivers. I have one that is about 5 years old, that uses a single crystal with a switch for the three weather frequencies. Each switch position warps the crystal oscillator to the appropriate frequency. It is far superior to the old Weather Cube!

To use the crystal-controlled weather receivers on Two Meters, it would be necessary to change the crystal. To figure the frequency, subtract the existing crystal's frequency from the weather channel frequency (which one?), to determine the intermediate frequency. (If it happens to be 10.7 MHz, you may be able to use common scanner crystals.) Then, add or subtract the IF to/from your Two Meter frequency, to determine a new crystal frequency.

The weather band is far enough away from Two Meters, to require retuning of the RF stages.

73, Fred, K4DII

22. Need help to what may be a stupid question....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 22:29:42 UTC
From: st92ba44@dunx1.ocs.drexel.edu
Message-ID: <CJ2rtI.AyE@Dunx1.OCS.Drexel.Edu>
Source record: 118961

hello.
I'm rather new at this (just thought i'd let you know up front).
anyway, i'm working on a shortwave superhet reciever (which uses the
TDA7000 IC chip) and, now that i'm all done, it doesn't work. I've checked
the thing 2 or 3 times now (its driving me crazy). Here is where my problem
may be: i don't know where to anchor the -12V lead. :\ The schematic i have
does not include the negative lead (i suppose i should *know* where it goes).
I hooked it to ground and, obvioulsy, got a short (my batteries were glowin'
red; i.e. they became extremely hot). The audio output seems, to me, to just
be the output from a capacitor or three (loud at first, no signal, then
gradually dies down). The other radios have the negative lead going to
a tap from one of the toroid coils...but that doesn't work for me. BTW,
it is a 455-kHz superhet IF circuit with varactor-tuned coils.
i'd appreciate any help i could get. thanks in advance.

____
antonio gatta
st92ba44@dunx1.ocs.drexel.edu

23. Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-03 23:51:25 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2gab1t$5v2@hpscit.sc.hp.com>
Source record: 118962

I mentioned in passing that an FSK shift of .8 times the baud rate is optimum in the sense of minimizing BER vs. Eb/No. This seems to have raised a few eyebrows around here (even famous netizen Gary Coffman was surprised to hear this). I would like to go into some detail about this for you skeptics out there.

For incoherently detected FSK (as is done in ham radio), the minimum shift that will give orthogonality is a shift equal to the baud rate. For coherently detected FSK, the minimum shift that will give orthogonality is half the baud rate. This shift is commonly called "Minimum Shift Keying (MSK)" and is normally used with coherent detection. Shifts that are any integral multiple of half the baud rate are also orthogonal. In between shifts are not orthogonal.

Orthogonality (loosely speaking) means that the mark and space tones don't interfere with each other (I don't want to get too mathematical here).

It turns out that a shift of about .75 to .8 times the baud rate, although it is not orthogonal, gives the lowest bit error rate (BER) for a given energy per bit to noise spectral density ratio (Eb/No). Eb/No is proportional to S/N (signal to noise ratio), by the way. Even though it is a disadvantage to be non-orthogonal, the extra shift increases the detected signal more than enough to compensate for it. The optimum shift is .83 dB. better than the orthogonal shifts. Wider shifts are suboptimal because the receiver filter has to be wider and takes in more noise.

For "60 WPM" 5 bit RTTY, where the baud rate is 45.45, the shifts discussed above would be:

Minimum shift keying: 22.73 Hz.
Optimum shift keying: 34 Hz.
Minimum shift for orthogonality with non-coherent detection: 45.45 Hz.

In a communications theory sense, there is no reason to use more than 45.45 Hz. shift at 60 WPM. The only reason for using a ridiculously wide shift of 170 Hz. (or even 850 Hz.) is the frequency stability issue (admittedly a real issue). One way of partially fixing this problem is to detect the mark and space tones separately as ASK signals with separate narrow filters for each one.

Reference:

Digital Communications Systems by Peyton Z. Peebles
Prentice-Hall 1987

Page 267, last paragraph. Also, first sentence on p. 268.

Note that delta-omega in Peeble's book is *half* of the shift, as
it is normally defined.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

24. Re: TrakBox panel layout

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 00:35:44 UTC
From: fmitch@netcom.com
Message-ID: <fmitchCJ2xnM.4p7@netcom.com>
Source record: 118963

Felton Mitchell (fmitch@netcom.com) wrote:

: if you need the files directly, you can download the zip file from
: my data line, see below, or send me a blank, *formatted* disk of any
: flavor, along with return postage... i will dump the files on your disk and
: mail them back to you...

: thanks,
: mitch, wa4osr
: usnail: felton mitchell, 11 midtown park, e., mobile, al 36606 usa
: packet: WA4OSR@W4IAX.#MOBAL.AL.USA.NA
: internet: fmitch@netcom.com
: landline: 205-342-7259 home, 205-476-4100 work, 205-476-0465 fax
: 205-342-4073 data

the data line in the post above is wrong... the correct number is:
205-344-4073 ...
u know i call my own data line often... hi

mitch
--
---
fmitch@netcom.com
Felton "Mitch" Mitchell, WA4OSR in Mobile, Alabama USA
205-342-7259 home, 205-476-4100 work, 205-476-0465 FAX
co-sysop for W4IAX bbs running fbb ... sysop for WA4OSR DXCluster in Mobile..
---

25. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 02:56:35 UTC
From: davidj@rahul.net
Message-ID: <CJ346B.85I@rahul.net>
Source record: 118964

In <2gacn5$k57@reznor.larc.nasa.gov> kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:

>In article <CJ2MA7.EDw@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>I wrote:
>>:
>>: Is it my imagination, or is the noise on the plastic packages much higher
>>: than the metal can equivalents?
>>
>>I think it's your imagination. I can imagine that the plastic case could
>>possibly cause increased 1/f noise (low-frequency) due to surface
>>contamination, but at VHF frequencies, the performance should be the same.

>Sorry, I'm an audio fellow and used to a regime where the 1/f noise is
>dominant. Anything over 30 MHz is complete voodoo.

>I did get a reply in mail, however, from a fellow who was unable to
>post, and I include it here for general edification:

[stuff deleted, said it was mostly the same]

It's not your imagination, *if* you're running at high input impedances (like I do, making condenser mic innards, input Z > 1.5 G ohms). In most cases, the American black plastic used for injection molding these cases is rather leaky. A few tens or hundreds of megohms, but of course that's way too much leakage current (ideal = 0, or less). Some of the Japanese makers have it right and have a black plastic that's opaque enough to prevent photons from reaching the junction but with enough insulation between the particles of pigment that no current flows. Some nuclear instrumentation types use metal can fets and saw off the can so they can clean the surface of the die, reporting significant improvement from this process.

--
David Josephson <david@josephson.com>

26. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 03:28:58 UTC
From: arog@BIX.com
Message-ID: <arog.757654138@BIX.com>
Source record: 118965

rkarlqu@scd.hp.com (Richard Karlquist) writes:

[lots deleted]

>It turns out that a shift of about .75 to .8 times the baud rate,
>although it is not orthogonal, gives the lowest bit error rate
>(BER) for a given energy per bit to noise spectral density ratio
>(Eb/No). Eb/No is proportional to S/N (signal to noise ratio),
>by the way. Even though it is a disadvantage to be non-
>orthogonal, the extra shift increases the detected signal more
>than enough to compensate for it. The optimum shift is .83 dB.
>better than the orthogonal shifts. Wider shifts are suboptimal
>because the receiver filter has to be wider and takes in more
>noise.

>Note that delta-omega in Peeble's book is *half* of the shift, as
>it is normally defined.

[more deleted]

>--------------------------------------

>Rick Karlquist N6RK
>rkarlqu@scd.hp.com

I'll agree with your comments for the case of an IC whose input
is both tones; however, for the case of designs that use seperate
filters and detectors, this is true only where the filters are
narrow enough to be able to get them that close to the same freq.

170 hz and wider shifts are used in no small part because the Q
of such things as 66 mh toroids make it hard to keep the other
tone out of the detector for its tone. Further, in this design,
the noise is that in the bandwidth of each tone filter and does
result in significantly better proformance than the cheaper.to.build
IC-Single-Filter method.

Alan Ogden, w6spk
arog@BIX.com moderator of ham.radio

27. Re: Need help to what may be a stupid question....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 05:52:05 UTC
From: drew@trl.oz.au
Message-ID: <drew.99.0@trl.oz.au>
Source record: 118966

In article <CJ2rtI.AyE@Dunx1.OCS.Drexel.Edu> st92ba44@dunx1.ocs.drexel.edu (antonio gatta) writes:
>From: st92ba44@dunx1.ocs.drexel.edu (antonio gatta)
>Subject: Need help to what may be a stupid question....
>Date: Mon, 3 Jan 1994 22:29:42 GMT
>
>hello.
> I'm rather new at this (just thought i'd let you know up front).
>anyway, i'm working on a shortwave superhet reciever (which uses the
>TDA7000 IC chip) and, now that i'm all done, it doesn't work. I've checked
>the thing 2 or 3 times now (its driving me crazy). Here is where my problem
>may be: i don't know where to anchor the -12V lead. :\ The schematic i have
>does not include the negative lead (i suppose i should *know* where it goes).
>I hooked it to ground and, obvioulsy, got a short (my batteries were glowin'
>red; i.e. they became extremely hot). The audio output seems, to me, to just
>be the output from a capacitor or three (loud at first, no signal, then
>gradually dies down). The other radios have the negative lead going to
>a tap from one of the toroid coils...but that doesn't work for me. BTW,
>it is a 455-kHz superhet IF circuit with varactor-tuned coils.
> i'd appreciate any help i could get. thanks in advance.
>
>
>
>_____
>antonio gatta
>st92ba44@dunx1.ocs.drexel.edu
>
Which circuit are you using? The "Explorer" HF receiver by Paul Daulton (73 Amateur Radio Aug. '92) has pin 16 as ground (presumably for -12V supply and signal). Try to look this article up- it may have some valuable clues for you.

Drew, VK3XU. Telecom Australia Research Laboratories.

28. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 07:03:57 UTC
From: kitagawa@ee.es.osaka-u.ac.jp
Message-ID: <KITAGAWA.94Jan4160357@qed.laser.ee.es.osaka-u.ac.jp>
Source record: 118769

```
WT7J> U310 n-channel jfet.
WT7J> source for this device?

I am not sure about current availability of Siliconix U310 (canned).
But you can probably use J310 (plastic-molded) as well, which you can
find easily. See ads of RF PARTS in QST for example. Also Sony's
2SK125 can be used in place of J310.

masa
*--- **** ***-- *--* *-* *-* QRZ? de JH3PRR
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp>
--
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp> $@KL@n(J $@>!9@(J
Electric Eng., Engineering Science, Osaka Univ. $@:eBg!&4pAC9)!&EE5$(J
```

29. Technical articles

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 09:31:27 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.757675887@bauv106>
Source record: 118967

I want to write 2 articles about new circuits related to RTTY.
Which publisher can be interested by the subject ? How can I contact
him ?

--
Claude F.

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

30. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 12:19:28 UTC
From: elendir@enst.fr
Message-ID: <2gbmsg$aui@cismsun.univ-lyon1.fr>
Source record: 118768

Ian D. Gay (gay@selkirk.sfu.ca) wrote:
: mb@xmb (0000-Admin(0000)) writes:

: >I'm gathering the parts for a 2-meter vfo. One of the transistors is a
: >U310 n-channel jfet. I've looked through my DigiKey and Mouser catalogs,

: It's a Siliconix part. I think J310 is the same thing in a plastic
: package, if you don't need the metal can.

You can find also this part in the "Motorola small-signal transistor handbook"
I can post the principal parameters if you like.

Vince.

31. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 13:14:47 UTC
From: kitagawa@ee.es.osaka-u.ac.jp
Message-ID: <KITAGAWA.94Jan4221447@qed.laser.ee.es.osaka-u.ac.jp>
Source record: 118775

Scott> Is it my imagination, or is the noise on the plastic packages
Scott> much higher than the metal can equivalents?

The same chips are used for U310 and J310.

Input capacitances which may change NF matching condition are same
(according to the data sheets).

If someone had experienced much worse NF for J310 than for U310, the
pin connections might have been the problem:-) Their pin connections
are a little confusing.

U310 J310 2SK125

3 ----- -----
2 1 2 3 1 2 3
1 \
\/
(BOTTOM VIEWS)
1 S 1 D 1 S
2 D 2 S 2 G
3 G & case 3 G 3 D

Be careful!

masa
*--- **** ***-- *--* *-* *-* QRZ? de JH3PRR
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp>
--
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp> $@KL@n(J $@>!9@(J
Electric Eng., Engineering Science, Osaka Univ. $@:eBg!&4pAC9)!&EE5$(J

32. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 14:15:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan4.141513.21531@ke4zv.atl.ga.us>
Source record: 118771

In article <2gab1t$5v2@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>
>I mentioned in passing that an FSK shift of .8 times the baud rate
>is optimum in the sense of minimizing BER vs. Eb/No. This seems
>to have raised a few eyebrows around here (even famous netizen
>Gary Coffman was surprised to hear this). I would like to go
>into some detail about this for you skeptics out there.

I'm not skeptical at all of MSK, Richard, it has a clear advantage in the presence of pure Gaussian noise. The Heatherington modem uses it. It's just that "narrow shift" for ordinary FSK of the type used on HF normally means 170 Hz. I was also somewhat startled to see you say that only hams used a shift as wide as 170 Hz for 45.45 baud RTTY. Commercial wire service signals use either 450 Hz or 850 Hz. Multiplex RTTY and SITOR also typically use wider shifts than 170 Hz. I'll talk about why below.

>In a communications theory sense, there is no reason to use more
>than 45.45 Hz. shift at 60 WPM. The only reason for using a
>ridiculously wide shift of 170 Hz. (or even 850 Hz.) is the
>frequency stability issue (admittedly a real issue). One way of
>partially fixing this problem is to detect the mark and space
>tones separately as ASK signals with separate narrow filters for
>each one.

Now the discussion of why a wider shift may be better at HF than the "optimum" shift. While frequency stabliity for autostart operations may be a consideration with simple detectors, the real reason is the nature of the channel errors at HF. The source of channel errors at HF is rarely Gaussian noise, so the BER advantage of MSK in Gaussian noise is usually moot.

Most channel errors at HF are burst errors caused by impulse type noises, selective fading, or interference. By using a wide shift, separate mark and space filters, and a soft decision circuit, it's possible to maintain solid copy even though mark or space may be momentarily obliterated by a channel error. That's why PLL type detectors are generally inferior to filter type detectors for HF RTTY. They only have one filter, necessarily of channel width, which exposes them to more sources of channel error than two very narrow filters with suitable decision networks staggered for mark and space detection. An error anywhere in the bandwidth unlocks the PLL, but the filter detector continues to work as long as it copies either mark or space.

By use of synchronous oversampling, extremely narrow mark and space filters can be synthesized. They aren't optimum from the standpoint

of recovering maximum signal energy vis Gaussian noise, but that's
a good trade at HF where other sources of error predominate and signal
levels are usually fairly high.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

33. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 14:33:52 UTC
From: n4hy@tang.ccr-p.ida.org
Message-ID: <N4HY.94Jan4143352@tang.ccr-p.ida.org>
Source record: 118774

Rich:

I am afraid that I am in agreement with Gary. You do not give an argument
that this shift is the `best.' You state that it is. ALL good TU's, both
analog and DSP use the approach Gary mentions. By having a wider seperation,
with filters narrow (determined by baud rate, Nyquist or otherwise), the
NOISE performance of the TU can be made the same, but you do get the diversity
enhancement Gary mentioned. AEA, HAL, and others all use the sliding slicer
that helps fix up selective fading. Selective fading is easier to handle if
the tones are more widely seperated. Another factor that begins to enter
is the characteristics of the filters in your radio which all the arguments
to date have neglected I think. I wish to see a likelihood derivation before
I believe your claim. The ham that operates simtel-20, Keith ???, whose
call I can't remember, wrote the seminal paper almost 25 years ago that
details the sliding slicer approach now used by AEA, HAL, etc.

Bob

--
Robert W. McGwier | n4hy@ccr-p.ida.org Interests: ham radio,
Center for Communications Research | scouts, astronomy, golf (o yea, & math!)
Princeton, N.J. 08520 | ASM Troop 5700, ACM Pack 53 Hightstown
(609)-279-6240(v) (609)-924-3061(f)| I used to be a Buffalo . . . NE III-120

34. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 15:01:59 UTC
From: rick@cs.sunysb.edu
Message-ID: <2gc0d7$d8u@newsserv.cs.sunysb.edu>
Source record: 118770

0000-Admin(0000) (mb@xmb) wrote:
: I'm gathering the parts for a 2-meter vfo. One of the transistors is a
: U310 n-channel jfet. I've looked through my DigiKey and Mouser catalogs,
: along with catalogs from smaller suppliers, without finding it. Can anyone
: point me to a source for this device? Is this really a valid part number?
: Michael Bendio WT7J mb@titan.wordperfect.com 801 222-5367`k

Active Electronics (800)-363-7601 carries the U310. I bought a few
of these recently at the local Active branch.

Rick Spanbauer, WB2CFV
SUNY/Stony Brook

35. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 17:21:16 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2gc8ic$q34@hpscit.sc.hp.com>
Source record: 118772

In article <1994Jan4.141513.21531@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>
>Most channel errors at HF are burst errors caused by impulse type noises,
>selective fading, or interference. By using a wide shift, separate mark
>and space filters, and a soft decision circuit, it's possible to maintain
>solid copy even though mark or space may be momentarily obliterated by a
>channel error. That's why PLL type detectors are generally inferior to
>filter type detectors for HF RTTY. They only have one filter, necessarily
>of channel width, which exposes them to more sources of channel error
>than two very narrow filters with suitable decision networks staggered
>for mark and space detection. An error anywhere in the bandwidth unlocks
>the PLL, but the filter detector continues to work as long as it copies
>either mark or space.

What you say is generally true. However, if 170 Hz. is good for this
reason, 850 Hz. ought to be even better. Funny you don't hear much 850
anymore. (Yes I know, its not politically correct because it wastes
spectrum). In any event, outside of the HF world, the AWGN model generally
applies. (AWGN= additive white gaussian noise).

Anyway, we're getting into semantics here. The system you are describing
(which is a good system to be sure) could also be described as ASK
(amplitude shift keying) with 2-fold diversity. You could just as well
send out two optimum FSK signals (with .8*baud rate shift) spaced 850 Hz.
apart), 3 dB down. I suspect that would give even better performance
because of the 3 dB advantage of FSK over ASK. However, I don't suppose the
FCC would let you do that in the ham bands :-).

>By use of synchronous oversampling, extremely narrow mark and space
>filters can be synthesized. They aren't optimum from the standpoint
>of recovering maximum signal energy vis Gaussian noise, but that's
>a good trade at HF where other sources of error predominate and signal
>levels are usually fairly high.

If the transmitter and receiver use matched filters, the optimum
-6dB bandwidth is equal to the baud rate (45.45 Hz. in the 60 WPM
5 bit example). This is known as the Nyquist bandwidth.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

36. MFJ Audio Mods?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 18:12:17 UTC
From: groverc@gvgadg.gvg.tek.com
Message-ID: <7975@gold.gvg.tek.com>
Source record: 118773

I need the audio mods for increasing the audio output from the MFJ 90xx rigs.
One of the techs at MFJ said that it was a simple mod but couldn't remember
what it was other than a resistor was shorted (or cut).

Any help appreciated.

Grover

WT6P

37. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 20:23:32 UTC
From: hale@btree.uucp
Message-ID: <1994Jan4.202332.27675@btree.uucp>
Source record: 118776

In article <CJ2MA7.EDw@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>Scott Dorsey (kludge@grissom.larc.nasa.gov) wrote:
>: In article <gay.757624877@sfu.ca> gay@selkirk.sfu.ca (Ian D. Gay) writes:
>: >mb@xmb (0000-Admin(0000)) writes:
>: >
>: >>I'm gathering the parts for a 2-meter vfo. One of the transistors is a
>: >>U310 n-channel jfet.
>: >
>: >It's a Siliconix part. I think J310 is the same thing in a plastic
>: >package, if you don't need the metal can.
>
>Correct
>
>: Is it my imagination, or is the noise on the plastic packages much higher
>: than the metal can equivalents?
>
>I think it's your imagination. I can imagine that the plastic case could
>possibly cause increased 1/f noise (low-frequency) due to surface
>contamination, but at VHF frequencies, the performance should be the same.
>
>AL N1AL

The same die in the can will probably have a lower noise figure than
the plastic version of that device becuase the metal can provides
a better thermal path and therefore a lower die temperature.

Bob Hale ...!ucsd!btree!hale
...!hale@brooktree.com (preferred)

38. Re: HELP - Need Mot MOCOM 70 info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-04 22:31:41 UTC
From: Chris Terwilliger <a229aa@email.sps.mot.com>
Message-ID: <1994Jan4.223141.29548@newsgate.sps.mot.com>
Source record: 118777

Motorola parts & manuals can be ordered from

1-800-422-4210

* Chris Terwilliger, AA7WD a229aa@email.sps.mot.com *
* Motorola AA7WD@N7MRP.AZ.USA.NA *
* Phoenix Corporate Research Labs those who forget the past *
* 2100 E. Elliot Rd. EL508 are condemned to repeat it *
* Tempe, AZ 85284 - George Santayana *

39. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 00:02:45 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2gd035$o5q@hpscit.sc.hp.com>
Source record: 118778

In article <N4HY.94Jan4143352@tang.ccr-p.ida.org>,
Bob McGwier <n4hy@tang.ccr-p.ida.org> wrote:
>
>
>Rich:
>
>I am afraid that I am in agreement with Gary. You do not give an argument
>that this shift is the `best.' You state that it is. ALL good TU's, both

I think what I said has been misinterpreted. If you use an FSK detector
(not two ASK detectors), then this shift is best. You are right that I
don't give an argument why it is best; that argument is in the reference
and is too complicated to post here. The original discussion involved using
an XR2211 as an FSK detector, and for that case the .8*baud rate shift is
optimum for AWGN.

>that helps fix up selective fading. Selective fading is easier to handle if
>the tones are more widely seperated. Another factor that begins to enter

It seems to me that selective fading should be minimized if the tones are
very close in frequency. Any disagreement?

>to date have neglected I think. I wish to see a likelihood derivation before
>I believe your claim.

The derivation is in the reference. In fact, the derivation is in many
books on data transmission. Again, the derivation is for AWGN channels only.
Funny HF effects may change the results.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

40. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 02:07:22 UTC
From: gary@vulcan.com
Message-ID: <ZeqNFc1w165w@vulcan.com>
Source record: 118784

n4hy@tang.ccr-p.ida.org (Bob McGwier) writes:

>
{ a good thread on HF data modems }
I've been interested in this subject for some time. The only
reference that I've been able to find on HF data modems is an article in
Communications Quarterly about 2 years ago by Dr. Chandler of AEA. He
talks about both the soft detection and the dual filters.

Anyway, I was wondering if anyone knew of a currently available book
on this subject. Most texts on data communications via radio these days
(at least the ones I've seen) deal with M-ary signaling at microwave
frequencies. Is there a reference on simple FSK modems at HF ?

I am sensitive to the concerns about using USENET without first looking
elsewhere :-).

Thanks

Gary Tennyson
gary@vulcan.com

41. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 03:49:06 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan5.034906.25199@ke4zv.atl.ga.us>
Source record: 118779

In article <2gc8ic$q34@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>>
>>Most channel errors at HF are burst errors caused by impulse type noises,
>>selective fading, or interference. By using a wide shift, separate mark
>>and space filters, and a soft decision circuit, it's possible to maintain
>>solid copy even though mark or space may be momentarily obliterated by a
>>channel error. That's why PLL type detectors are generally inferior to
>>filter type detectors for HF RTTY. They only have one filter, necessarily
>>of channel width, which exposes them to more sources of channel error
>>than two very narrow filters with suitable decision networks staggered
>>for mark and space detection. An error anywhere in the bandwidth unlocks
>>the PLL, but the filter detector continues to work as long as it copies
>>either mark or space.
>
>What you say is generally true. However, if 170 Hz. is good for this
>reason, 850 Hz. ought to be even better. Funny you don't hear much 850
>anymore. (Yes I know, its not politically correct because it wastes
>spectrum). In any event, outside of the HF world, the AWGN model generally
>applies. (AWGN= additive white gaussian noise).

Yes wider shifts are better. In fact *very* wide shift, IE spread
spectrum, is even better yet for dealing with the kinds of channel
errors that plague HF. (SS is, of course, more than just a wide shift,
but the diversity argument still holds.) Outside of HF, there isn't
much RTTY activity, so Gaussian noise performance is not too applicable.
(I'm ignoring VHF/UHF packet, though similar techniques apply to it. In
practice at VHF/UHF most of it is strong signal AFSK now anyway. The
only exception is satellite use, and Gaussian noise criteria would be
appropriate there, but doppler makes very narrow shifts a practical
problem.)

>Anyway, we're getting into semantics here. The system you are describing
>(which is a good system to be sure) could also be described as ASK
>(amplitude shift keying) with 2-fold diversity. You could just as well
>send out two optimum FSK signals (with .8*baud rate shift) spaced 850 Hz.
>apart), 3 dB down. I suspect that would give even better performance
>because of the 3 dB advantage of FSK over ASK. However, I don't suppose the
>FCC would let you do that in the ham bands :-).

I do believe it's legal now, though it didn't used to be, to have more
than one transmitter operating on the same band at the same time. Redundancy
is the secret to robustness. Having correlated signals spread over a wider
bandwidth gives better channel error immunity with the kinds of error sources
at HF. Other forms of redundancy, such as FEC, are also good.

>>By use of synchronous oversampling, extremely narrow mark and space
>>filters can be synthesized. They aren't optimum from the standpoint
>>of recovering maximum signal energy vis Gaussian noise, but that's
>>a good trade at HF where other sources of error predominate and signal
>>levels are usually fairly high.
>
>If the transmitter and receiver use matched filters, the optimum
>-6dB bandwidth is equal to the baud rate (45.45 Hz. in the 60 WPM
>5 bit example). This is known as the Nyquist bandwidth.

You can use sub-Nyquist filtering if you can tolerate the loss of
signal energy and bit smearing that such filtering implies. At HF
you almost always can. The point I'm trying to make here is that
it's a mistake to use Gaussian noise performance criteria for a
medium where Gaussian noise isn't the primary problem.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

42. Re: U310 JFET???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 13:41:01 UTC
From: kitagawa@ee.es.osaka-u.ac.jp
Message-ID: <KITAGAWA.94Jan5224101@qed.laser.ee.es.osaka-u.ac.jp>
Source record: 118780

>>>>> "DJ" == David Josephson <davidj@rahul.net> writes:

DJ> It's not your imagination, *if* you're running at high input
DJ> impedances (like I do, making condenser mic innards, input Z >
DJ> 1.5 G ohms).

This is far from the situation in which U310/J310s are used for low noise *RF* frontend. Optimum NF matching to 50 ohm input line is much easier for grounded gate configuration because it offers nearly optimum input impedance (~100 ohm) without matching circuit. Broadband NF matching can be achieved by just paralleling a pair of JFETs.

masa

*--- **** ***-- *--* *-* *-* QRZ? de JH3PRR
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp>

43. Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 14:52:40 UTC
From: jangus@skyld.tele.com
Message-ID: <757781560snx@skyld.tele.com>
Source record: 118782

I think that the point you're missing about selective fading is that if your signal is too narrow (MSK) when the selective fade drifts across you, you're gone. Period. With the 170 Hz shift and two detectors the selective fade usually dosen't hit both tones at the same time. (Hence the magic name selective fading.)

"Real keyboards have green keycaps"

73 es GM from Jeff

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

44. 6m quad design,help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 19:08:12 UTC
From: gwood@robins.af.mil
Message-ID: <2gf36s$hk4@wrdis02.robins.af.mil>
Source record: 118781

can some one out there help me with a design of a 6m quad
i would like for it to be a 3,4,5 elelment with a max boom
around 17 feet.

KC4YBL
GREG WOOD

45. 457 KHz Avalanche Tranceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 21:34:10 UTC
From: trotter@allegra.att.com
Message-ID: <1994Jan5.213410.20654@ulysses.att.com>
Source record: 118783

I'd like to make an avalanche tranceiver and I wonder if anyone
has either a circuit for a homebrew one or can point me in the
direction of any information on such a device?

The avalanche tranciever is a tranciever that operates on 457 KHz
in continuous transmit mode until you need to use it then you
turn it onto receive in order to find the unfortunate person who
is burried (and who still has their tranceiver on transmit). While
I could probably think of a reasonably good circuit for this myself
I'd perfer to use a "tested" design given its potential use. I
could buy one - but they cost about $300 which seems very expensive
for what it is.

So any information on a design or where I might get information
or a circuit diagram would be greatly appreciated!

Thanks,
John
N2OEV

trotter@allegra.att.com

Any opinions expressed are mine and not my employer's.

46. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-05 23:58:33 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2gfk79$bcb@hpscit.sc.hp.com>
Source record: 118785

In article <757781560snx@skyld.tele.com>,
Jeffrey D. Angus <jangus@skyld.tele.com> wrote:
> I think that the point you're missing about selective fading is that if
> your signal is too narrow (MSK) when the selective fade drifts across
> you, you're gone. Period. With the 170 Hz shift and two detectors the
> selective fade usually dosen't hit both tones at the same time. (Hence
> the magic name selective fading.)

Like I said originally, if 170 is so good, 850 ought to be even better.
So why did everyone change from 850 to 170?

Rick Karlquist N6RK
rkarlqu@scd.hp.com

47. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 04:25:39 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan6.042539.611@ke4zv.atl.ga.us>
Source record: 118787

In article <2gfk79$bcb@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>In article <757781560snx@skyld.tele.com>,
>Jeffrey D. Angus <jangus@skyld.tele.com> wrote:
>> I think that the point you're missing about selective fading is that if
>> your signal is too narrow (MSK) when the selective fade drifts across
>> you, you're gone. Period. With the 170 Hz shift and two detectors the
>> selective fade usually dosen't hit both tones at the same time. (Hence
>> the magic name selective fading.)
>
>Like I said originally, if 170 is so good, 850 ought to be even better.
>So why did everyone change from 850 to 170?

850 Hz is better, but the PLL detector came along in cheap manufactured
equipment and didn't work well with the wide shift for the reasons
you stated in the original exchange. Most hams didn't understand
why they were using wide shift, nyquist limits and associated math
were impressive buzzwords to them, and the idea that narrow is better
was easily accepted because of their early CW brainwashing. :-) (Narrow
really is better for CW.) So they had no trouble changing over to the
newer equipment with it's narrow shift. There were other factors too.
At about the same time, HF radios were changing over to SSB transceivers
and RTTY started using AFSK tones into the SSB transmitters. Since early
SSB rigs had filters that weren't phase or amplitude linear for spit,
wide shift didn't work very well through them. The older rigs were CW
rigs that were direct FSKed, and receivers used LC filtering that had
a soft response curve that worked well with the wider shift. Even Nyquist
showed in 1928 that a cosine response was best for FSK reception.

Many old timers have noted the reduced performance of the newer equipment,
but either never knew, or forgot, why the wider shift was better. If they
complained, it was either about the perceived worse band conditions, or the
shoddy performance of solid state equipment. They were snowed by arguments
put forth by manufacturers and the amateur press, such as the one you made,
that the narrow shift was better. Those arguments are even true if the issue
is Gaussian noise, but at HF that's not the problem.

Irv Hoff explained it all very well in his series of articles in QST
back in the late 60s. Some of that is reproduced in the 1975 ARRL book
Specialized Communications Techniques for the Radio Amateur. The primary
source of channel errors at HF is not that of weak signals buried in
Gaussian noise. Rather it is impulse noises, selective fading, and
adjacent channel interference.

Gary
--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

48. Rebuilding a Heath Warrior RF amp.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 04:47:43 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Jan6.044743.18733@osuunx.ucc.okstate.edu>
Source record: 118786

I have aquired a Heath Kit Warior Amp. 4 parralel 811A's. It seems the high voltage Transformer is shorted. It is a center tapped 3,400 volts at about 600 to 700 ma. I plan to replace the gas tube rectifiers with 3 1 or 2 amp 1kv diodes.

Any ideas and past ecperiance with making this a better amp and a source for transformer either 1700 v or 3400 v center tapped would be appricated. I am planing to put a -100 volts or so grid bias cutoff to shut the tubes down on recieve. I would like to use it for pactor which needs some pretty fast switching. The time can be adjusted for the change over to a fairly long time.

My first thought is to leave the antenna hooked to the output of the amp at all times and hook the reciver to the antenna with a normal open realy. Build a sequencer that when the ptt line is activated blocks the grid on the Amp and switch the reciver in. When the ptt drops the reciver antenna is shorted to ground, the grid unblocked and the xmiter on. I expect that it will take some logic in the ttl line to trap it and do the proper sequence before the ptt is passed on to the xciver.

All comments welcome. I will summerize if the response warrents it.

Thanks
Gordon

/* Gordon Couger */
/* Biosystems & Agricultural Engineering */
/* Oklahoma State University */
/* 114 Ag Hall, Stillwater, OK 74074 */
/* gcouger@olesun.agen.okstate.edu 405-744-9763 day 624-2855 evenings */
/* I Speak only for myself and not for anyone else */

49. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 08:00:36 UTC
From: haynes@cats.ucsc.edu
Message-ID: <2gggf4$jhn@darkstar.UCSC.EDU>
Source record: 118788

In article <2gfk79$bcb@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>Like I said originally, if 170 is so good, 850 ought to be even better.
>So why did everyone change from 850 to 170?

Well I'll take a stab at that, without climbing upstairs to review old
issues of RTTY circa 1960 first.

We started out with 850 because that was the military standard - remember
the AN/FGC-1? - and that was probably because drifty receivers like the
SP-600, etc. are fairly intolerable with much less. For the same reason
we didn't do much operating at 20 meters and above, because our transmitters
were the kind where the VFO was on 80 or 160 and multiplied to get to
the higher frequency bands, so the drift was multiplied too. Actually
the military standard 850 probably was derived from a pre-world-war-II
operation by Press Wireless and friends.

Anyway, when SSB became popular the amateur transmitters and receivers
were improved in frequency stability; and then we could think about using
narrower shift. It seemed like the humane thing to do, cut down on the
apparent bandwidth of our signals. 170 was chosen because, I think,
there was a whole series of off-the-shelf carrier telegraph filters with
frequencies spaced at multiples of 170 - that's where 850 came from.
And being able to operate 170 implied that your transmitter and receiver
were good enough for the job, hence something to brag about.

Few if any of the early TUs actually took advantage of the frequency
diversity of wide shift anyway. Most of them had an input bandpass
filter, a limiter, and then a discriminator or pair of filters with
detectors taking the difference of the two filter outputs. Someone
pointed out that if you're going to use a limiter then a linear discriminator
is better than the nonlinear one you get with a couple of sharp filters
under certain conditions I don't remember. The theory of detecting
on-off keyed signals, and then combining the results of two channels
in frequency diversity, was never very well brought out in the amateur
literature.

Then too, a lot of hams used TUs of simple design, entirely adequate
for AFSK operation on VHF; but they used then at HF and depended on
the selectivity of the receiver for pre-limiter bandpass filtering.
Better TUs designed specifically for HF almost always had their own
input filters. I remember we discussed a lot whether the filter
should be flat over the passband or should be more of a comb filter,
with peaks at the mark and space frequencies and a dip in between.
I don't know if anyone ever really made filters both ways and compared
them.

Then too, besides QRM and selective fading we've got multipath
to think about...

--
haynes@cats.ucsc.edu
haynes@cats.bitnet

"Ya can talk all ya wanna, but it's dif'rent than it was!"
"No it aint! But ya gotta know the territory!"
Meredith Willson: "The Music Man"

50. 457 KHz Avalanche Tranceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 14:52:26 UTC
From: jangus@skyld.tele.com
Message-ID: <757867946snx@skyld.tele.com>
Source record: 118792

In article <1994Jan5.213410.20654@ulysses.att.com> trotter@allegra.att.com writes:

> The avalanche tranciever is a tranciever that operates on 457 KHz
> in continuous transmit mode until you need to use it then you
> turn it onto receive in order to find the unfortunate person who
> is burried (and who still has their tranceiver on transmit). While
> I could probably think of a reasonably good circuit for this myself
> I'd perfer to use a "tested" design given its potential use. I
> could buy one - but they cost about $300 which seems very expensive
> for what it is.

The $300 is for the fact that it WILL work when it is supposed to.
Reminds me of a poster for some back up software that had a climber
hanging over a cliff from a rope. The rope was slowly unraveling.
"How much did you say you saved on this?" was the caption.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

51. Peltier Diodes - HELP!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 17:39:43 UTC
From: S1.RSW@ISUMVS.IASTATE.EDU
Message-ID: <CJ7yD6.HF6@news.iastate.edu>
Source record: 118790

Greetings and Happy New Year!

I am interested in obtaining information about thermoelectric devices called Peltier Diodes (junctions?). My extremely limited understanding of these devices is that at low voltage DC they act as unidirectional heat pumps, and have been used in electric cooler units with suitable heat sinks and "cold" sinks on the heat energy input side. Since I am NOT an electrical engineer (a botanist/professor actually) I'd appreciate any information the engineers among you might have as to how these devices work (practically, not theoretically!), how they are rated, and if possible, how to use them in constructing cooler units. These might be useful for improving efficiency of power supply heat sinks?? but honestly, my ulterior motive is in the construction of a cool-chamber in which to store my homebrew beers!! As a ham with a very small modicum of electronics background (pretty damn small!), I've been asked by some fellow homebrewers to investigate these beasts, and try to prototype some "homebrew" coolers for our homebrews (pretty neat, eh?).
If any of you have information about these Peltier devices, application notes,m thermal ratings, recommendations for installation/increasing efficiency, etc. I'd be (actually WE'D be) very appreciative to learn about these, or at least sources where we could get more information. Thanks in advance for your help....

Please e-mail to: s1.rsw@isumvs.iastate.edu

Rob Wallace
Assistant Profesor of Botany
Iowa State University

52. ***** WANTED 4PR400A / 8188 TUBES *****

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 17:58:04 UTC
From: waldo@lucifer.stanford.edu
Message-ID: <2ghjfc$qb8@morrow.stanford.edu>
Source record: 118789

I am interested in purchasing some new or used 4PR400A/8188 tubes.
Does anybody have some they want to get rid? If so, please contact
me via e-mail or phone. Thanks in advance.

Waldo Winterburn
415-723-3006
waldo@lucifer.stanford.edu

53. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 20:37:38 UTC
From: alanb@sr.hp.com
Message-ID: <CJ86Mr.2pu@srgenprp.sr.hp.com>
Source record: 118791

James H. Haynes (haynes@cats.ucsc.edu) wrote:

: In article <2gfk79$bcb@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
: >Like I said originally, if 170 is so good, 850 ought to be even better.
: >So why did everyone change from 850 to 170?

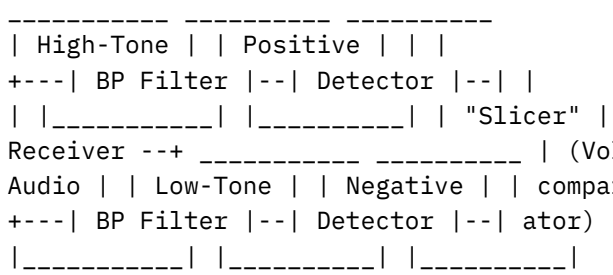
: We started out with 850 because that was the military standard

Right.

I think there were two reasons for switching to 170 Hz shift. One was to
reduce interference / allow space for more channels per band.

The other was to allow narrower IF filtering. With 850 Hz, you had to
use your SSB filter, around 2.5 kHz wide. With 170 Hz shift, you could
switch in your CW filter, generally 400 or 500 Hz wide. This gave a big
advantage in interference rejection.

I don't think most amateur TU's (TU = Terminal Unit = demodulator)
got much benefit from diversity anyway. Typical block diagram:



Sometimes post-detection low pass filters would be included as well.

AL N1AL

54. Toroid info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-06 23:28:55 UTC
From: sehneg@austin.ibm.com
Message-ID: <CJ8EK7.327I@hawnews.watson.ibm.com>
Source record: 118793

I recently completed building a QST 20m QRP receiver project which involved winding my own toroids, from pre-written instructions. (3 turns on form # XX-T-)

I've become fascinated with them & would like to learn how to "roll my own"

Where can I buy a small sample of toroids & where can I learn how to design with them? (Application info)I've had trouble locating them in catalogs like DigiKey.

Can someone post some info or e-mail directly? Thanks

Gary (N2KTY/QRP)

55. Re: 457 KHz Avalanche Tranceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 01:30:37 UTC
From: davidj@rahul.net
Message-ID: <CJ8K73.J4r@rahul.net>
Source record: 118794

In <757867946snx@skyld.tele.com> jangus@skyld.tele.com (Jeffrey D. Angus) writes:

> > The avalanche tranciever is a tranciever that operates on 457 KHz
> > in continuous transmit mode until you need to use it then you
> > turn it onto receive in order to find the unfortunate person who
> > is burried (and who still has their tranceiver on transmit). While
> > I could probably think of a reasonably good circuit for this myself
> > I'd perfer to use a "tested" design given its potential use. I
> > could buy one - but they cost about $300 which seems very expensive
> > for what it is.

> The $300 is for the fact that it WILL work when it is supposed to.
> Reminds me of a poster for some back up software that had a climber
> hanging over a cliff from a rope. The rope was slowly unraveling.
> "How much did you say you saved on this?" was the caption.

I looked into manufacturing these a while ago and corresponded with
some folks who answered a query on rec.backcountry. You can get them
for about $200 from REI and other discounters. They need to be not
only 457 kHz but 2.275 kHz also for the old style receivers that are
still in use here in the US some places. The technology is very
primitive. However even with a good design I don't think I would like
to field test one in actual use without a backup.

--
David Josephson <david@josephson.com>

56. Re: Toroid info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 03:06:42 UTC
From: drew@trl.oz.au
Message-ID: <drew.100.0@trl.oz.au>
Source record: 118795

In article <CJ8EK7.327I@hawnews.watson.ibm.com> sehneg@austin.ibm.com (Sehne) writes:
>From: sehneg@austin.ibm.com (Sehne)
>Subject: Toroid info
>Date: Thu, 6 Jan 1994 23:28:55 GMT
>
>I recently completed building a QST 20m QRP receiver project which involved
>winding my own toroids, from pre-written instructions. (3 turns on form # XX-T-)
>
>I've become fascinated with them & would like to learn how to "roll my own"
>
>Where can I buy a small sample of toroids & where can I learn how to design with
>them? (Application info)I've had trouble locating them in catalogs like DigiKey.
>
>Can someone post some info or e-mail directly? Thanks
>
>Gary (N2KTY/QRP)

Gary,

Write to Amidon Associates, 12033 Otsego Street, N. Hollywood Ca. 91607;
they can supply a comprehensive data sheet/application notes/design
formulae for their toroidal, E and pot-cored products. My copy was free
with my last order.

73 Drew, VK3XU. Telecom Australia Research Laboratories.

57. Re: QRP Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 09:40:39 UTC
From: bencze@isl.stanford.edu
Message-ID: <BENCZE.94Jan7094039@isl.stanford.edu>
Source record: 118799

>> On Fri, 31 Dec 1993 22:41:44 -0500, Don.Waybright@f177.n264.z1.fidonet.org (Don Waybright) said:

> Does anyone know a where to find a good source for QRP rig designs? I
> had a few here but they have disappeared.

Take a look at the ARRL QRP Classics book; it has a bunch of designs of varying complexity. Also, if you have a library which has back issues of QST, take a look through them. There's many designs in there which don't make it into the anthology-type books.

73, Bill, KD6TOB

--
Bill Bencze bencze@isl.stanford.edu

58. Re: Help--audio mixer design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 10:57:49 UTC
From: c2k@ham.slc.mentorg.com
Message-ID: <C2K.94Jan7105749@ham.slc.mentorg.com>
Source record: 118800

In article <CJ9HGM.My0@murdoch.acc.Virginia.EDU> clh6w@faraday.clas.Virginia.EDU (Carole L. Hamilton) writes:

Newsgroups: rec.radio.amateur.homebrew
Path: hpcan240.mentorg.com!news.mentorg.com!uunet!europa.eng.gtefsd.com!darwin.sura.net!hearst.acc.Virginia.EDU!murdoch!faraday.clas.Virginia.EDU!clh6w
From: clh6w@faraday.clas.Virginia.EDU (Carole L. Hamilton)
Subject: Help--audio mixer design
Message-ID: <CJ9HGM.My0@murdoch.acc.Virginia.EDU>
Sender: usenet@murdoch.acc.Virginia.EDU
Organization: University of Virginia
Distribution: usa
Date: Fri, 7 Jan 1994 13:29:10 GMT
Lines: 16

I'm trying to build a 3 channel audio mixer to
take 8 ohm output from 3 receivers and "blend"
it to a common 8 ohm bus. Using three LM386's, when I
connect the outputs they go into oscillation.
I've tried power supply from 5v to 12v and put
all the spec sheets bypass capacitors in. The
configuration is minimum gain (i.e. 20) with
no external gain resistors.

If I try to isolate the 386's with small ohmage
resistors between outputs, I get bad freq response.

Anyone have any suggestions or design source books?
Tnx,

Ned Hamilton, AB6FI

Howdy,
Try mixing on the input -- resistive divider, then using *one* amplifier to
drive the bus.

Cheers,
Carl
--

My opinions are mine, (all mine), and do not necessarily reflect
those of my employer.

Carl Ketcham carl_ketcham@mentorg.com WA7ZBV
Mentor Graphics, Suite 300, 5295 South 300 West, Murray, Utah 84107
---

59. Help--audio mixer design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 13:29:10 UTC
From: clh6w@faraday.clas.Virginia.EDU
Message-ID: <CJ9HGM.My0@murdoch.acc.Virginia.EDU>
Source record: 118796

I'm trying to build a 3 channel audio mixer to
take 8 ohm output from 3 receivers and "blend"
it to a common 8 ohm bus. Using three LM386's, when I
connect the outputs they go into oscillation.
I've tried power supply from 5v to 12v and put
all the spec sheets bypass capacitors in. The
configuration is minimum gain (i.e. 20) with
no external gain resistors.

If I try to isolate the 386's with small ohmage
resistors between outputs, I get bad freq response.

Anyone have any suggestions or design source books?
Tnx,

Ned Hamilton, AB6FI

60. Re: Toroid info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 15:42:31 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <CJ9nMv.1wJq@yuma.ACNS.ColoState.EDU>
Source record: 118797

In article <drew.100.0@trl.oz.au> drew@trl.oz.au (Drew Diamond) writes:
>In article <CJ8EK7.327I@hawnews.watson.ibm.com> sehneg@austin.ibm.com (Sehne) writes:
>>winding my own toroids
>>I've become fascinated with them & would like to learn how to "roll my own"
>>Where can I buy a small sample of toroids & where can I learn how to design with
>>Gary (N2KTY/QRP)
>Write to Amidon Associates, 12033 Otsego Street, N. Hollywood Ca. 91607;
>they can supply a comprehensive data sheet/application notes/design
>formulae for their toroidal, E and pot-cored products. My copy was free
>with my last order.
>73 Drew, VK3XU. Telecom Australia Research Laboratories.

Also try Fair-Rite Products, Box J, Wallkill, NY 12589, 914-895-2055
and Palomar Engineers, Box 462222, Escondido,CA 92046, 619-747-3343.
I use Amidons, but they're available at my local electronics shop.
Also get/checkout a copy of the ARRL handbook. Chapter 2 has much info on
ferrites.
Galen, KF0YJ

61. Re: Help--audio mixer design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 19:24:41 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <CJ9xx5.20q2@yuma.ACNS.ColoState.EDU>
Source record: 118801

In article <C2K.94Jan7105749@ham.slc.mentorg.com> c2k@ham.slc.mentorg.com (Carl Ketcham) writes:
>In article <CJ9HGM.My0@murdoch.acc.Virginia.EDU> clh6w@faraday.clas.Virginia.EDU (Carole L. Hamilton) writes:
>
> I'm trying to build a 3 channel audio mixer to
> take 8 ohm output from 3 receivers and "blend"
> it to a common 8 ohm bus. Using three LM386's, when I
> connect the outputs they go into oscillation.
> Ned Hamilton, AB6FI
>Howdy,
>Try mixing on the input -- resistive divider, then using *one* amplifier to
>drive the bus.
>Carl

Also try putting 8 ohm resistors across the three radio outputs so the radios see an 8 ohm load. Then use a resistive mixer on the input of one LM386.
An attempt art a diagram:

```
RADIO OUTPUT----------|----------|
/ / 25-50K pot
8 ohms \ \
/ /<--------/\/\/\/\/\-------|
\ \ 10K |
/ / . |----- TO LM386
GROUND----------------|----------| . |
. . . |
. . . .
. . . .
As many more sections as needed.... From other sections
. . . .
. . . .
```

I use this to make cheap recordings off of guitar amps, but I use a speaker instead of an 8 ohm resistor.
I've only had five inputs at max, so I'm not sure how many you can actually put on before you load down the input of the LM386 (in this case).
I use an LF353 to do the summing/amp'ing.
Galen, KF0YJ

62. First an FAQ, and then some questions...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 20:55:05 UTC
From: g5g192@rick.cs.ubc.ca
Message-ID: <2gki79$etc@cs.ubc.ca>
Source record: 118802

First, an FAQ request =).

Second, I didn't know where to post this, so I'll try here. If I'm posting in the wrong base, let me know and I'll move =). Basically, I want to start off by building the simplest of transmitters. I want to know how to build something that will transmit at a selected frequency (by me), and will transmit anything (by that I mean I don't really care -- garbage, static, whatever). I don't know where to start =).

Any help would be much appreciated. thanx!

63. Re: First an FAQ, and then some questions...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-07 23:18:41 UTC
From: oppedahl@panix.com
Message-ID: <2gkqkh$92u@panix.com>
Source record: 118803

In <2gki79$etc@cs.ubc.ca> g5g192@rick.cs.ubc.ca (Omid Ramin) writes:

>Second, I didn't know where to post this, so I'll try here. If
>I'm posting in the wrong base, let me know and I'll move =).
>Basically, I want to start off by building the simplest of
>transmitters. I want to know how to build something that will
>transmit at a selected frequency (by me), and will transmit
>anything (by that I mean I don't really care -- garbage, static,
>whatever). I don't know where to start =).

Amateur radio is really the way to go on this one. If you transmit at a randomly selected frequency you are likely to get in trouble with the Canadian counterpart to the US Federal Communications Commission. You might interfere with the radios the fire fighters use to talk to each other, or whatever. Or you could mess up some radiotelescope that is listening to faint signals from some distant place.

If you study for, and get, an amateur radio license you will learn the frequencies at which amateurs are permitted to transmit, the permitted power levels, and so on. And you will enter a community that includes people who would gladly help you learn more.

Good luck.

--
Carl Oppedahl AA2KW
Oppedahl & Larson (patent lawyers)
Yorktown Heights, NY
voice 212-777-1330

64. Re: Toroid info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-08 00:39:37 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Jan8.003937.15892@cyphyn.radnet.com>
Source record: 118804

Sehne (sehneg@austin.ibm.com) wrote:
:
: Where can I buy a small sample of toroids & where can I learn how to design with
: them? (Application info)I've had trouble locating them in catalogs like DigiKey.
:
: Can someone post some info or e-mail directly? Thanks
:
: Gary (N2KTY/QRP)

Also try Polomar Engineers phone 619-747-3343 (Calif)

get their free cat...ALL the info is IN the cat!

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

65. SRA-1 mixer pinout/specs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-08 03:34:11 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CJAKL0.C0x@iat.holonet.net>
Source record: 118805

Have been building the Campbell R2 receiver. I have some Mini-Circuits SRA-1 mixers on hand, but I'm uncertain of the detailed specs. My 1988 ARRL handbook says it has LO/RF range of 5-500 MHz, but my Radiokit catalog (reliable source?!) says 0.5-500 MHz. May want to run it on 80 meters someday, so I'd like to know which is right.

Also, the pinout the guy gave me was the same as the SBL-1. Can anyone confirm this?

Bottom View: (1=blue mark)

```
RF IF Gnd Gnd
1 3 5 7
+ + + +
|
+ + + +
2 4 6 8
Case IF Gnd LO
```

John Seboldt K0JD

66. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-09 05:06:35 UTC
From: bm@hydra.carleton.ca
Message-ID: <bm.10.2D2F90DB@hydra.carleton.ca>
Source record: 118806

In article <N4HY.94Jan4143352@tang.ccr-p.ida.org> n4hy@tang.ccr-p.ida.org (Bob McGwier) writes:
>From: n4hy@tang.ccr-p.ida.org (Bob McGwier)
>Subject: Re: Optimum FSK shift
>Date: 4 Jan 94 14:33:52

>I am afraid that I am in agreement with Gary. You do not give an argument
>that this shift is the `best.' You state that it is. ALL good TU's, both
>analog and DSP use the approach Gary mentions. By having a wider seperation,
>with filters narrow (determined by baud rate, Nyquist or otherwise), the
>NOISE performance of the TU can be made the same, but you do get the diversity
>enhancement Gary mentioned. AEA, HAL, and others all use the sliding slicer
>that helps fix up selective fading. Selective fading is easier to handle if
>the tones are more widely seperated. Another factor that begins to enter
>is the characteristics of the filters in your radio which all the arguments
>to date have neglected I think. I wish to see a likelihood derivation before
>I believe your claim. The ham that operates simtel-20, Keith ???, whose
>call I can't remember, wrote the seminal paper almost 25 years ago that
>details the sliding slicer approach now used by AEA, HAL, etc.

Okay, I'm going to even things up by agreeing with Rick. :-) Actually, the paper which first derived the optimum shift, if I recall rightly, concluded that it was about 0.72. It depends somewhat on the filter characteristics - I think that paper assumed Butterworth of a fairly low order. In any case, the optimum is in the 0.6 - 0.8 range. It's certainly true that the wider-shift systems will often outperform an FSK system with "optimum" modulation index on a selective fading channel, but as Rick correctly points out, they are dual-diversity ASK systems, so it's an apples and oranges comparison. On the other hand, if I were designing an FSK system (not AFSK, of course) for a link at VHF/UHF, I would aim for a modulation index of around 0.7... all things being equal, it *would* be near the optimum in this application.

Barry VE3JF

>--
>Robert W. McGwier | n4hy@ccr-p.ida.org Interests: ham radio,
>Center for Communications Research | scouts, astronomy, golf (o yea, & math!)
>Princeton, N.J. 08520 | ASM Troop 5700, ACM Pack 53 Hightstown
>(609)-279-6240(v) (609)-924-3061(f)| I used to be a Buffalo . . . NE III-120

67. Help--Vertical antenna for 80m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-09 13:17:09 UTC
From: clh6w@faraday.clas.Virginia.EDU
Message-ID: <CJD68L.K9C@murdoch.acc.Virginia.EDU>
Source record: 118807

I'm planning to shunt feed my 72 foot crank-up tower
to get a good receiving antenna for about 3.790 Mhz.
Anyone have any idea where the end of the gamma shunt
should attach to tower? What difference does the
diameter of the shunt material make (e.g. 1/2 inch
copper pipe versus #6 copper ground wire).
I know I'll have to experiment but want a rough guess
to start.
Tnx, Ned Hamilton, AB6FI

68. Rebuilding a Heath Warrior RF amp.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-09 15:35:02 UTC
From: Jim.Molinaro@f302.n268.z1.fidonet.org
Message-ID: <758200842.AA04853@rochgte.fidonet.org>
Source record: 118810

Gordon , you could try Peter Dahl or Top Tec Inc for the transformer.
Dahl will make a transformer to your specs . Top Tec rebuilds vintage radio
transformers .
If you solid state the power supply the voltage may rise . Hollow state
devices , tubes , have a forward voltage drop .

Peter Dahl Co
El Paso , Tx
915 751 2300 latest no. I could find 1992

Top Tec Inc
Max Kunz
Houston , Tx
713 440 9909

69. Help with Quicky Projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-09 19:01:46 UTC
From: whitemp@cnsvax.uwec.edu
Message-ID: <1994Jan9.130146.11887@cnsvax.uwec.edu>
Source record: 118808

Hi - I have a couple of projects rambling around in my head that seem easy enought to build - but I have know idea on how to start them!

1) I, like many no-coders have a HT (yeasu ft-470.) Now, I think a useful gadget to build would be a phone patch for obvious reasons...
Any plans/hints on how to get going? Nothing fancy really needed; a control operator would be present to dial the phone, etc.

2) A personal repeater type thing for simplex. Again, using the HT, a little gadget that one could hook up, record a little bit of voice (say 30 secs) and then retransmit when the frequency is clear. 30 Secs is a short time, but would be useful in emergencies, etc.

Thanks for any help/plans!
Mike White
N9UXC
whitemp@cnsvax.uwec.edu (Internet)
N9UXC@bbscfl.#cfl.wi.usa.na (packet)

70. Re: SRA-1 mixer pinout/specs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-09 22:55:37 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <CJDx0p.unI@yuma.ACNS.ColoState.EDU>
Source record: 118809

In article <CJAKL0.C0x@iat.holonet.net> rohrwerk@orac.holonet.net (John Seboldt) writes:
>Have been building the Campbell R2 receiver. I have some Mini-Circuits
>SRA-1 mixers on hand, but I'm uncertain of the detailed specs. My 1988
>ARRL handbook says it has LO/RF range of 5-500 MHz, but my Radiokit
>catalog (reliable source?!) says 0.5-500 MHz. May want to run it on 80
>meters someday, so I'd like to know which is right.
>

Mini-Circuits catalog sez 0.5-500 MHz, hello 80!

>Also, the pinout the guy gave me was the same as the SBL-1. Can anyone
>confirm this?
>Bottom View: (1=blue mark)
> RF IF Gnd Gnd
> 1 3 5 7
> + + + +
> |
> + + + +
> 2 4 6 8
> Case IF Gnd LO
>John Seboldt K0JD

Yes, this is the correct pinout for both devices except the SBL-1 does
not have a case ground specified.

Galen, KF0YJ

71. Re: Help with Quicky Projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-10 13:46:39 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan10.134639.20129@ke4zv.atl.ga.us>
Source record: 118811

In article <1994Jan9.130146.11887@cnsvax.uwec.edu> whitemp@cnsvax.uwec.edu writes:
>Hi - I have a couple of projects rambling around in my head that seem easy
>enought to build - but I have know idea on how to start them!
>
>1) I, like many no-coders have a HT (yeasu ft-470.) Now, I think a useful
>gadget to build would be a phone patch for obvious reasons...
>Any plans/hints on how to get going? Nothing fancy really needed; a control
>operator would be present to dial the phone, etc.

This is called a *simpatch*, and commercially available units exist.
Basically it uses a sampling technique, listening for 0.1 sec out of
each second to determine when you key up, and transfers from transmission
to reception automatically when it detects your carrier. This leaves you
in control. Typically these units are controlled by touchtones and allow
outdialing only. Note that this is classed as auxillary operation and
requires you to operate at 222 MHz or higher.

>2) A personal repeater type thing for simplex. Again, using the HT, a little
>gadget that one could hook up, record a little bit of voice (say 30 secs)
>and then retransmit when the frequency is clear. 30 Secs is a short time,
>but would be useful in emergencies, etc.

This is called a *simpeater* and is also commercially available. This
system uses digital voice storage techniques.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

72. Midland 13-509 220Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-10 20:48:35 UTC
From: gary.higgs@pubcon.fort-worth.tx.us
Message-ID: <940111060423177@pubcon.fort-worth.tx.us>
Source record: 118871

I am looking for documentation for making the Midland 13-509 220
mobile into a repeater. If you are familiar with this rig, I'd like to
hear from you. Thx and 73

N5XED
=Gary=

73. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-11 06:09:46 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.758268586@bauv106>
Source record: 118812

In article <N4HY.94Jan4143352@tang.ccr-p.ida.org>,
Bob McGwier <n4hy@tang.ccr-p.ida.org> wrote:
>
>
>Rich:
>
>I am afraid that I am in agreement with Gary. You do not give an argument
>that this shift is the `best.' You state that it is. ALL good TU's, both

In article <2gd035$o5q@hpscit.sc.hp.com> dated 5 Jan 1994 00:02:45 GMT
Richard Karlquist <rkarlqu@scd.hp.com> wrote:

> I think what I said has been misinterpreted. If you use an FSK detector
> (not two ASK detectors), then this shift is best. You are right that I
> don't give an argument why it is best; that argument is in the reference
> and is too complicated to post here. The original discussion involved using
> an XR2211 as an FSK detector, and for that case the .8*baud rate shift is
> optimum for AWGN.

What do you mean with "FSK" vs. "ASK" detector ? A Travis
discriminator is usualy considered a FM discriminator i.e. a FSK
discriminator, but it is not more and not less as a pair of AM
detectors associated with a pair of resonant circuits tuned to
slightly different frequencies. In his very interesting serie of
articles in Wireless World, 1957, G.G. Johnstone demonstrated that
the Foster-Seeley discriminator can be considered as equivalent to
the Travis discriminator.

The XR2211 is different. It is a Phase Locked Loop circuit having
properties somewhat different from discriminators like the ones of
the Travis, Foster-Seeley or Ratio-Detector type. Is a PLL a "more"
FSK type discriminator than the above mentioned ones ?

Does the preceding limiter make the difference ?

OKay, I'm an old timer. I worked RTTY using 850 Hz shift as well as
170 Hz. My practical experience showed me that the 170 Hz is a good
shift for RTTY, better than the 850 Hz shift. The main reason is
that a narrower filter can be used with good results. 350 to 500 Hz
is a good bandwidth for the 170 Hz shift system. As smaller as the
bandwith is, as smaller is the probability that an interference occurs in
this bandwidth. Further, a narrow bandwidth reduces the effect of
selective QSB. As Irv Hoff noted in the 60s in his interesting serie
of articles in QST, the main problem in RTTY receiving is QRM and
QSB, not gaussian noise. My own experience showed me, that QRM is
usually a more severe problem than QSB. The 170 Hz shift allows an

oscillator drift according to the usually encountred oscillator
properties.

73 de Claude, DJ0OT, ex F5FC
--
Claude F.

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

74. Re: Help--Vertical antenna for 80m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-11 15:09:50 UTC
From: drs@ccd.harris.com
Message-ID: <1994Jan11.150950.28232@ccd.harris.com>
Source record: 118813

Carole L. Hamilton (clh6w@faraday.clas.Virginia.EDU) wrote:
: I'm planning to shunt feed my 72 foot crank-up tower
: to get a good receiving antenna for about 3.790 Mhz.
: Anyone have any idea where the end of the gamma shunt
: should attach to tower? What difference does the
: diameter of the shunt material make (e.g. 1/2 inch
: copper pipe versus #6 copper ground wire).
: I know I'll have to experiment but want a rough guess
: to start.
: Tnx, Ned Hamilton, AB6FI

A very rough (and not scientific) guess would be 30 feet up the tower.
Diameter of the shunt line will change the impedance - doesn't matter
much I don't think. Just make it match with your series gamma capacitor.
Doug, N4IJ

75. MODS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-11 17:45:26 UTC
From: (unknown)
Message-ID: <2guojm$f8i@mserv1.dl.ac.uk>
Source record: 118814

PLEASE HELP .....
ANY MODS FOR A KENWOOD TRO7600 144/146MHZ
IWAS THINKING WIDE BAND .
THANKS GEOFF

76. Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-11 22:01:29 UTC
From: mercer@dgs.dnd.ca
Message-ID: <2gv7jp$3e0@netfs.dnd.ca>
Source record: 118815
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I am an avid climber/backpacker etc and want to be able to use my HT in the backcountry. I require a design for an antenna (with better gain than my rubber duck) that is light, easily packable, and not too bulky, which will allow me to work repeaters in the 2m band. In case it matters, most (but not all) of the use will be from mountain tops.

Obviously, a 1/2 wave diapole is a candidate but I was wondering if there are any others?

How about a boom that can be disassembeled? A flexable J pole? I would appreciate any and all suggestions.

Thanks
DAve

|---|
| Captain Dave Mercer |
| Directorate of Land Armament and |
| Electronics Engineering and |
| Maintainenance 2-3-3 |
| National Defence Headquarters |
| Ottawa, Ontario, Canada |
| K1A 0K2 |
| |
| Voice: (819) 997-9831 |
| Fax: (819) 994-4246 |
| EMail: mercer@ncs.dnd.ca |
HAM: VE3XMJ

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77. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 03:35:37 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan12.033537.27514@ke4zv.atl.ga.us>
Source record: 118817
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <2gv7jp$3e0@netfs.dnd.ca> mercer@dgs.dnd.ca (David Mercer) writes:
>I am an avid climber/backpacker etc and want to be able to use my HT in
>the backcountry. I require a design for an antenna (with better gain
>than my rubber duck) that is light, easily packable, and not too bulky,
>which will allow me to work repeaters in the 2m band. In case it
>matters, most (but not all) of the use will be from mountain tops.
>
>Obviously, a 1/2 wave diapole is a candidate but I was wondering if
>there are any others?
>
>How about a boom that can be disassembeled? A flexable J pole? I would
>appreciate any and all suggestions.

Obviously a roled up twinlead J-pole will offer better performance than
the rubber dummy load, and it's easy to carry in the pack. However, if
you're really in the back country, a collapsable beam will be much better.
Simple designs based on folding elements from common TV antennas are
available. You can slip the folded antenna into a PVC tube and use that
as a walking stick. When you're ready to operate, the PVC can double as
a short mast.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

78. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 04:02:20 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan12.040220.27865@ke4zv.atl.ga.us>
Source record: 118868

In article <claude.758268586@bauv106> claude@bauv.unibw-muenchen.de (Claude Frantz) writes:
>OKay, I'm an old timer. I worked RTTY using 850 Hz shift as well as
>170 Hz. My practical experience showed me that the 170 Hz is a good
>shift for RTTY, better than the 850 Hz shift. The main reason is
>that a narrower filter can be used with good results. 350 to 500 Hz
>is a good bandwidth for the 170 Hz shift system. As smaller as the
>bandwith is, as smaller is the probability that an interference occurs in
>this bandwidth. Further, a narrow bandwidth reduces the effect of
>selective QSB. As Irv Hoff noted in the 60s in his interesting serie
>of articles in QST, the main problem in RTTY receiving is QRM and
>QSB, not gaussian noise. My own experience showed me, that QRM is
>usually a more severe problem than QSB. The 170 Hz shift allows an
>oscillator drift according to the usually encountred oscillator
>properties.

You can consider the filter response a cascade of the receiver first IF filter and the filters in the demodulator if you can guarantee that the first IF isn't overloaded (a non-trivial problem with some of today's receivers). That means you can achieve an effective bandwidth of around 35 Hz with a filter mode demodulator even if your receiver filter is 1 kHz. Running with AGC disabled, and use of front end attenuators as required, must be assumed for effective RTTY operation. (Note: if you use audio derived AGC, from the filter outputs, you can use some slow AGC to follow gradual fades.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

79. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 04:06:35 UTC
From: bobw@col.hp.com
Message-ID: <2gvt0b$fiv@hp-col.col.hp.com>
Source record: 118816
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

David Mercer (mercer@dgs.dnd.ca) wrote:
: I am an avid climber/backpacker etc and want to be able to use my HT in
: the backcountry. I require a design for an antenna (with better gain
: than my rubber duck) that is light, easily packable, and not too bulky,
: which will allow me to work repeaters in the 2m band. In case it
: matters, most (but not all) of the use will be from mountain tops.

: Obviously, a 1/2 wave diapole is a candidate but I was wondering if
: there are any others?

: How about a boom that can be disassembeled? A flexable J pole? I would
: appreciate any and all suggestions.

I'd recommend an AEA Hot Rod (tm) antenna or similar.
Its a half-wave vertical (so no ground radials required) that
fits onto an HT BNC, telescopes down to about 8 inches long.
(There's one laying somewhere on the Continental Divide Trail,
where I dropped it.:-)

2nd choice is a j-pole made out of TV twinlead. Not really that
great unless there are usually trees around to hang it in.
Even then its probably too much hassle for the hiking/backpacking
scenario.

There are beams that disassemble, but unless you really need the
few dB of gain and are going to stay put for a while, I'd say
they are too much hassle as well.

Bob Witte / HP PMO (Colo Springs) / bobw@col.hp.com / KB0CY / (719) 590-3230

80. Re: Peltier Diodes - HELP!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 07:42:26 UTC
From: smattila@metz.une.edu.au
Message-ID: <3022@grivel.une.edu.au>
Source record: 118878

About the Peltier elements. There is only one company I know making these things, it is Melcor, somewhere in the USA. They make Peltier elements from 0.32 W (a few millimeters size) up to 120 W (62 by 62 mm). The problem with Peltier element is low efficiency, less than 50 per cent and low operating voltage (around 0.5 V per element). Melcor specifies maximum temperature difference 65 ... 70 degrees (Celsius or Kelvin), but elements are much more effective with lower difference. Maximum temperature is 110 degrees Celsius.

There are commercial ice boxes for cars and boats using Peltier elements. Peltier elements are common in cooling CCD elements and other semiconductors down to -70 degrees Celsius. Elements can be cascaded for higher temperature difference.

Melcor Peltier elements are thin (2.7 ... 5.6 mm) ceramic squares with metallic surfaces. One gets becomes cool, other hot. The positive and negative terminals and thus cool and hot surfaces are defined in Melcor Peltier elements. In a generic Peltier element, you can change the polarity and thus cold and hot surfaces.

The small element, 0.32 W (code 618-718) is A$64.19 (about US$40), the large one, 120 W (code 284-826) is A$272.98 (about US$190).

Source: RS Components (Australia) catalog Sept. 1993, p. 460 and very old personal memories.

Sakari Mattila smattila@metz.une.edu.au The University of New England
(VK2XIN, OH2AZG) tel. +61 67 733752 Armidale NSW 2351, Australia

81. Wanted: Circuit Diagrams for 2-Way Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 08:26:38 UTC
From: lels@unpcs1.cs.unp.ac.za
Message-ID: <lels.4.758363198@unpcs1.cs.unp.ac.za>
Source record: 118869

I want to build up 2 base set radios communicating within a range
of 5Km

I do not mind if they are AM or FM ... nor do I mind what freq they run on

Any pointers .... please mail to lels@unpcs1.cs.unp.ac.za

Leonard Els
lels@unpcs1.cs.unp.ac.za

82. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 11:25:46 UTC
From: walker_d@ix.wcc.govt.nz
Message-ID: <2h0mnq$mge@golem.wcc.govt.nz>
Source record: 118870
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <2gv7jp$3e0@netfs.dnd.ca>, mercer@dgs.dnd.ca (David Mercer) writes:
>I am an avid climber/backpacker etc and want to be able to use my HT in
>the backcountry. I require a design for an antenna (with better gain
>than my rubber duck) that is light, easily packable, and not too bulky,
>which will allow me to work repeaters in the 2m band. In case it
>matters, most (but not all) of the use will be from mountain tops.
>
>Obviously, a 1/2 wave diapole is a candidate but I was wondering if
>there are any others?
>
>How about a boom that can be disassembeled? A flexable J pole? I would
>appreciate any and all suggestions.
>
>Thanks
>DAve
>|--

I've been using a J-pole for years now.. it's made of 1/4 inch Al, and
breaks down into 3 x 1/4 wavelength sections. When I go tramping (hiking)
into areas where rptr coverage is marginal, I just strap the thing to the
side of my pack (slip it inside my compression straps). Takes less than
a minute to take it off the side of the pack and assemble it, and it
weighs next to nothing. The antenna has survived fairly rough treatment,
and is still going strong. I've decided that the extra hassles involved
in carrying a beam (ie extra weight and bulk) are not justified; the
J-pole is also easily repairable should any damage occur.
What I am now looking for is a rugged dual band antenna design (no radials)
that I can break down and throw onto the pack. Any suggestions??? Some of the
hills around here reflect UHF signals into the valleys much better thhan 2m
ones, though generally, attenuation in the bush on 70cm seems to be a lot
greater than at 2m.

cheers,
Dave, ZL2BHE.

83. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 14:24:50 UTC
From: Nguyent@snowmass.ksc.nasa.gov
Message-ID: <1994Jan12.092451.1134@titan.ksc.nasa.gov>
Source record: 118874
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

David,

Try a rolled up J-pole. It's made of 300 Ohm Twin lead and tapped with a
50 Ohm coax with BNC connector on opposite end. It provides about 2.8dB
gain. You can buy the ant from MFJ for about $12 or build it yourself.
The dimensions are below:

```
-- for 146MHz center freq
|
|
|
|
this side |
56" |
| | <---------------------------------- trim here for best SWR.
| | 14" on this side
| |
coax====> - - 1-3/4" tap from bottom
| |
---
```

I've experimented with lots of these with good results (built about 30 or so
for myself, friends, and local HAM classes).

Good luck and 73,
Tom
AD4NA

84. MODS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 15:28:55 UTC
From: (unknown)
Message-ID: <2h14vn$19m@mserv1.dl.ac.uk>
Source record: 118875

PLEASE HELP MODS FOR A KENWOOD TRO 7600 145/146MHZ
THINKING OF EXTENDED RECEIVE

85. help help help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 16:47:13 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2h19ih$4ds@olivea.ATC.Olivetti.Com>
Source record: 118872
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi there ,

I got possession of this instrument but not manual (user nor owner)

WAYNE KERR
Automatic Component Bridge
B605

I think this is used to measure C and L and R but not completly sure.
It has 4 boards (logic,analogic,supply and display) built more or less
in 1984 I guess. It has a pod where to place the component under measurement
connected to the mainframe with 2 coax cable plus another cable with a jack
with two contact at the mainframe end.

The other problem is that the LCD of it ,I think, is not working
so I am looking for the schematics of this object other than
the user's manual.
I will pay xerox and shipment if somebody can help me suppling
them to me.
Last question: is Wayne Kerr still in the
buisness so that I could ask to them for some help.

Thanks to anybody that will reply to me I prefer email directly
to me at robertov@hqlab.ico.olivetti.com

Roberto Valfredini

86. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 17:03:00 UTC
From: myers@sunspot.West.Sun.COM
Message-ID: <2h1ag4INNbhq@abyss.West.Sun.COM>
Source record: 118873
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Jan12.092451.1134@titan.ksc.nasa.gov> Nguyent@snowmass.ksc.nasa.gov (Tom) writes:
>David,
>
>Try a rolled up J-pole. It's made of 300 Ohm Twin lead and tapped with a
>50 Ohm coax with BNC connector on opposite end. It provides about 2.8dB
>gain. You can buy the ant from MFJ for about $12 or build it yourself.

Since a J-pole is an end-fed 1/2 wave vertical, how does it have
2.8 dB of gain? 2.8dB of gain in relation to what? A quarter-wave?
A dipole? An isotropic radiator?

Optimally, a J-pole will have 0 dB relative to a 1/2 wave dipole,
but the matching section contributes loss, so I'd normally expect
a J-pole to provide a little less than 0dB, say -.5dB relative
to a dipole. If so, this is something like 1.5dB over an isotropic
radiator...

--
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

87. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-12 23:09:55 UTC
From: haynes@cats.ucsc.edu
Message-ID: <2h2003$o20@darkstar.UCSC.EDU>
Source record: 118876

In article <claude.758268586@bauv106> claude@bauv.unibw-muenchen.de (Claude Frantz) writes:
>What do you mean with "FSK" vs. "ASK" detector ? A Travis
>discriminator is usualy considered a FM discriminator i.e. a FSK
>discriminator, but it is not more and not less as a pair of AM
>detectors associated with a pair of resonant circuits tuned to
>slightly different frequencies. In his very interesting serie of

Well in a typical FSK receiving setup you have the bandwidth of the receiver, and then perhaps a bandpass filter (which might be flat-topped or two-peaked), and then a limiter, and then the pair of tuned circuits which constitute a discriminator. In this case FM limiter capture takes effect, so whatever signal is strongest at the input to the limiter will dominate the output. I don't know if any theoretical work has been done about the concepts of non-flat-bandpass pre-limiter filtering, or on nonlinear discriminators.

On the other hand, you might have a non-limiting path from the receiver output through a pair of filters, each with an amplitude detector; and you don't necessarily combine the detector outputs by simply subtracting. You might, for instance, use logic such that if both detectors say mark you output mark; if both say space you output space; if they don't agree you output mark. Or you might decide which to believe by seeing which recently had the stronger signal.

TUs of both kinds have been built, or TUs where the limiter can be switched off. As I recall the limiter on gives best results if you can keep the desired signal stronger than the interference; and the limiter-off gives better performance when the desired signal is weak, but usually at that point copy is so crummy anyway that you might as well give up.

I did some experimenting years ago with positive feedback around the limiter and its input filter. There were some papers by Elie J. Baghdady of MIT in the late 1950s on this topic which suggested that the best performance was to be had with just enough positive feedback around the limiter to cause oscillation in the absence of input. (IEEE Transactions on Communication, if I remember correctly) I didn't have the smarts nor the test facilities to make any measurements you could hang your hat on; but it did seem qualitatively that the feedback helped.

--
haynes@cats.ucsc.edu
haynes@cats.bitnet

"Ya can talk all ya wanna, but it's dif'rent than it was!"
"No it aint! But ya gotta know the territory!"

Meredith Willson: "The Music Man"

88. Re: Wanted: Circuit Diagrams for 2-Way Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 00:22:46 UTC
From: rich@mulvey.com
Message-ID: <1994Jan13.002246.4251@mulvey.com>
Source record: 118904

Leonard Els (lels@unpcs1.cs.unp.ac.za) wrote:

: I want to build up 2 base set radios communicating within a range
: of 5Km

: I do not mind if they are AM or FM ... nor do I mind what freq they run on

YOU may not care, but rest assured that the rest of us do.

- Rich
--
Rich Mulvey Amateur Radio: N2VDS Rochester, NY
rich@mulvey.com "Full power on half a watt."

89. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 02:14:55 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2h2aqv$ss6@hpscit.sc.hp.com>
Source record: 118877

In article <2h2003$o20@darkstar.ucsc.edu>,
James H. Haynes <haynes@cats.ucsc.edu> wrote:
>
>I did some experimenting years ago with positive feedback around the
>limiter and its input filter. There were some papers by Elie J. Baghdady
>of MIT in the late 1950s on this topic which suggested that the best
>performance was to be had with just enough positive feedback around the
>limiter to cause oscillation in the absence of input. (IEEE Transactions
>on Communication, if I remember correctly) I didn't have the smarts nor
>the test facilities to make any measurements you could hang your hat on; but
>it did seem qualitatively that the feedback helped.

There are some FM video demodulator IC's that were introduced a few years ago (by Philips or Plessey, I can't remember for sure) that used oscillating limiter front ends followed by PLLs. They had substantially lower thresholds that most other demods when used for TVRO receivers. So I think Baghdady's paper (March 1958 Proc. IRE, I believe) has some validity. By the way, it was based on an earlier (1956?) Baghdady paper that was based on a ~1953 paper by some other author.

However, it is not obvious to me that threshold effect is relevant to FSK reception.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

90. Re: Peltier Diodes - HELP!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 12:11:22 UTC
From: sbrown@charon.dseg.ti.com
Message-ID: <SBROWN.94Jan13061122@charon.dseg.ti.com>
Source record: 118879

In article <3022@grivel.une.edu.au> smattila@metz.une.edu.au (Sakari Mattila) writes:

> About the Peltier elements. There is only one company I know
> making these things, it is Melcor, somewhere in the USA. They
> make Peltier elements from 0.32 W (a few millimeters size) up
> to 120 W (62 by 62 mm). The problem with Peltier element is
> low efficiency, less than 50 per cent and low operating voltage
> (around 0.5 V per element). Melcor specifies maximum temperature
> difference 65 ... 70 degrees (Celsius or Kelvin), but elements
> are much more effective with lower difference. Maximum temperature
> is 110 degrees Celsius.

[... Stuff deleted ...]

> Source: RS Components (Australia) catalog Sept. 1993, p. 460 and
> very old personal memories.

I saw ad for Peltier diodes in the latest issue of Nuts and Volts. I
don't remember who ran the ad but I can dig it out if there is sufficient
interest.

****
Steve Brown, WD5HCY	
sbrown@charon.dseg.ti.com	Simplicate
wd5hcy@wd5hcy.ampr.org	and add
[44.28.0.61]	lightness.
wd5hcy@kf5mg.#dfw.tx.usa.na	
****

91. Re: Midland 13-509 220Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 14:18:04 UTC
From: jra@lawdept.daytonoh.ncr.com
Message-ID: <jra.48.00094D61@lawdept.daytonoh.ncr.com>
Source record: 118884

In article <9401110604231177@pubcon.fort-worth.tx.us> gary.higgs@pubcon.fort-worth.tx.us (GARY HIGGS) writes:

>I am looking for documentation for making the Midland 13-509 220
>mobile into a repeater. If you are familiar with this rig, I'd like to
>hear from you. Thx and 73

There was a TAB book published in the early 80s called something like "The Complete Guide to FM Repeaters," by Bill Pasternak WA6ITF and someone else.

Like most TAB books, it has its load of typos, misidentified figures, and misinformation, but it does have a chapter on converting the 13-509 to repeater service. Dunno if it's still in print, though.

You might also check out the "220 Notes" publication that comes (came) out of Chicago. That had lots of articles on 13-509 mods.

92. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 15:54:05 UTC
From: horak@convex.com
Message-ID: <horak.758476445@convex.com>
Source record: 118880
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have hiked several times with my Cushcraft 4 element 2 meter beam. If you need the extra gain from a beam, it works great and is not overly bulky to carry if you pack it into a tube or keep it in the original box. I use wingnuts to speed the assembly process and have a portable tripod to mount the thing. It's sort of home-brewed out of a similar design I saw in the ARRL handbook. Anyway, like someone else said here, the AEA Hotrod is a great little telescopic antenna that outperforms a duck several times over.

David N5OFQ

93. Assorted questions..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 16:48:45 UTC
From: andyw@aspen32.cray.com
Message-ID: <1994Jan13.104845.5353@hemlock.cray.com>
Source record: 118881

First a simple question:
Does any know where I can find the spec for gerber files ?
I want to write a converter from gerber to interface to an
ancient Houson Instruments DMP-5 plotter.

Now a more involved, and totally unrelated question:
I have a Yaesu drop in charger (NC-29), these have a terrible
reputation for frying NiCad packs, so I was thinking of replacing
the charging circuit with something better. Does anyone have
any favourite designs they've built in the past ?

I was also wondering if anyone knows the secret of the 4 srping
contacts that mate with the battery pack, my 12V pack has 3
contacts on it, and my 7.2V pack only has 2. I've not traced out
the circuit yet, so it may become self-evident when I do that.

One last question (I promise):
Does Fluke (in the US) have a spare parts phone number ? I've
got an old Fluke DMM, with a cracked LCD display that I'd like
to fix.

Thanks, I'll summarise answers to nay or all questions if there's interest.
--
andyw N0REN/G1XRL

andyw@aspen.cray.com Andy Warner, Cray Research, Inc. (612) 683-5835

94. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 17:35:49 UTC
From: eri316@tijc02.uucp
Message-ID: <1994Jan13.173549.7089@tijc02.uucp>
Source record: 118883
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

> I am an avid climber/backpacker etc and want to be able to use my HT in
> the backcountry. I require a design for an antenna (with better gain
> than my rubber duck) that is light, easily packable, and not too bulky,
> which will allow me to work repeaters in the 2m band. In case it
> matters, most (but not all) of the use will be from mountain tops.
>

Well I'm not so avid, but I'd like to be. Make the roll-up J-pole.
Around here, the mountain tops are where the repeaters ARE, so I
look for a better signal from the bottom of the Gorge.

Hey maybe you could load up a variety of wired nuts and see if any
might present a match???

--Ed

95. Yeasu FT401/FT101 Mod wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 20:45:46 UTC
From: hdakin@akin.b8.ingr.com
Message-ID: <2h4btq$cq@b8.b8.ingr.com>
Source record: 118885

I have a vintage FT401 that I aquired while in Japan. I know there was a version of the FT101 that used a pair of 6146s for finals. I would like to convert the FT401 that I have to 6146 finals. If anyone has the data available or a schematic for the FT101 that used the 6146 finals. I would sure appreciate a copy.
--

==========

Henry D. Akin Phone (205)859-3345
2001 Laverne Dr. email hdakin@akin.b8.ingr.com
Huntsville, AL 35810

==========

96. 2M TRANSCEIVER DESIGN FOR 9600 BAUD PACKET

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-13 21:53:26 UTC
From: shane@mdd.comm.mot.com
Message-ID: <2h4fsm$fa@bb39c.mdd.comm.mot.com>
Source record: 118882
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

I'm planning to construct a 1 watt, 2 meter transceiver for 9600 baud packet.
Before I went and reinvented the wheel I thought I'd see if anyone else
out there has already covered this ground.

If this is something new, would anyone care to speculate as to the market
for such an item?

Hugh Shane
N7UAX
shane@mdd.comm.mot.com
voice: 206 825 9327

97. Re: Assorted questions..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-14 14:00:29 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan14.140029.10701@ke4zv.atl.ga.us>
Source record: 118886

In article <1994Jan13.104845.5353@hemlock.cray.com> andyw@aspen32.cray.com (Andy Warner) writes:
>
>Now a more involved, and totally unrelated question:
> I have a Yaesu drop in charger (NC-29), these have a terrible
> reputation for frying NiCad packs, so I was thinking of replacing
> the charging circuit with something better. Does anyone have
> any favourite designs they've built in the past ?

I'll tackle this. The NC-29 is a straight timed charger, and will indeed fry batteries that aren't fully discharged. It'll also reset it's timer and give *another* full charge to the battery if there's a bump on the power line. Definitely not good. Yaesu has a newer charger, the NC-42, that solves these problems, but it's not intended for FT-470 packs. If you take a dremel tool, or a knife, and whittle away the plastic rib on the inner side of the charger pocket, FT-470 batteries will fit in, and be properly charged.

If you want to rebuild the NC-29 instead, the best circuit is a pulse charger that samples cell voltage between pulses and shuts off when it sees the small voltage sag that occurs as the battery reaches full charge. This is only a few millivolts, and needs to be read under a moderate load. There was a circuit in QST a while back.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

98. Request for XR2211 RTTY decoder circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-14 14:56:14 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan14.225614.1@ntuvax.ntu.ac.sg>
Source record: 118887

Hi,

Can anyone send me any circuit for RTTY decoding based on the XR2211? Please include as much info on the circuit as
possible, especially calculations for frequencies if possible. Tks.

73 de 9VG Daniel

99. Re: Assorted questions..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-14 16:01:28 UTC
From: epacyna@auratek.COM
Message-ID: <1212@auratek.COM>
Source record: 118889

In article <1994Jan13.104845.5353@hemlock.cray.com>, andyw@aspen32.cray.com (Andy Warner) writes:
>
> Now a more involved, and totally unrelated question:
> I have a Yaesu drop in charger (NC-29), these have a terrible
> reputation for frying NiCad packs, so I was thinking of replacing
> the charging circuit with something better. Does anyone have
> any favourite designs they've built in the past ?
>
Common 3 terminal voltage regulators (e.g. LM317,780X) can be wired as constant current sources and make excellent NiCad chargers. Here is an example:

```
.................
Vin . .Vout Diode
......... LM 317 ..............|\|......+
. . . |/|
.................. .
.Vref > To
. > R Battery
. >
. .
..................
.............................................-
```

Set R so that the battery will charge at 10% of it's full amp-hour capacity.

If your battery is rated at 1 Amp Hour, then you want to change it at 100ma for 12 hours (the 2 extra hours make up for loss). R will be Vref / current needed. Vref for a LM317 is 1.25V. So R would be 1.25V / .1A = 12.5 ohms.

The diode is there to keep current going into the battery (not visa versa).

Voltage into the circuit must at least equal the required regulator overhead (typically 2V) + Vref + V(diode drop) + battery voltage.

The components must be rated to handle the power dissipation based on specific charging requirements.

Ed W1AAZ

100. Need Repair Info for Monitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-14 16:53:40 UTC
From: steveh@hpcvra.cv.hp.com
Message-ID: <-299209999@hpcvra.cv.hp.com>
Source record: 118888

A few years ago, I bought a new Commodore C-64 for the kids, hoping they would play a few games and get interested in computers... What happened was, they got interested in computer games... Anyway, a couple of years went by, and the nice little Samsung composite color monitor that we bought with the system just up and died. Being an EE myself and having lots of test equipment at work, I could easily fix most little problems that crop up in such devices, IF I only had a schematic and maybe a little block diagram and some repair info. The kids aren't too interested anymore, and I might set up a dedicated packet station or something if I could get it fixed...

So, the question for the netters is: Where does one obtain this sort of information for this sort of equipment? I have heard that Sams Co. provides such stuff. Does any one know a phone and address for them? Do they provide a catalog or something? My suspicion is that the manufacturer would want to give you a thick manual that costs its weight in platinum and only covers one model (and probably hasn't been translated from Japanese), if you can even find the right contact in the company. I really would hate to throw this thing in the junk pile (I have more than enough CRT bombs lying around already). Thanks for any help!

-Steve KF7WY

101. suggestions wanted for 36-54MHz to 136-154MHz frequency converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 04:55:13 UTC
From: snorris@trumpet.aix.calpoly.edu
Message-ID: <1994Jan15.045513.107037@zeus.aix.calpoly.edu>
Source record: 118903

I am planning on building a frequency converter for my TH28 handheld
that will convert 36-54MHz to 136-154MHz. Has anyone done this? It's
seems like it should be pretty easy to do, but I wanted to try and get
some input on the subject before I started. I'm thinking of using a
NE602 double balanced mixer/oscillator as the heart of the project with
100Mhz for the LO. I'm sure someone has done this before, I just want to
get some ideas. If anyone can help me, It would be greatly appreciated.

Thanks,

Sean

Sean Norris snorris@trumpet.aix.calpoly.edu
--KE6BTE-- Electronic Engineers do it with less resistance.
---

102. Re: suggestions wanted for 36-54MHz to 136-154MH

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 05:30:42 UTC
From: myers@cypress.West.Sun.COM
Message-ID: <2h7v22INNcsh@abyss.West.Sun.COM>
Source record: 118890

In article 107037@zeus.aix.calpoly.edu, snorris@trumpet.aix.calpoly.edu (Sean Norris) writes:
>I am planning on building a frequency converter for my TH28 handheld
>that will convert 36-54MHz to 136-154MHz. Has anyone done this? It's
>seems like it should be pretty easy to do, but I wanted to try and get
>some input on the subject before I started. I'm thinking of using a
>NE602 double balanced mixer/oscillator as the heart of the project with
>100Mhz for the LO. I'm sure someone has done this before, I just want to
>get some ideas. If anyone can help me, It would be greatly appreciated.

The NE602 makes a lousy front end. Sure, it is compact and it does provide a simple solution, but it wasn't designed to deal with signals of a wide dynamic range, as you might encounter with low-band VHF.

Instead, I'd suggest you use dual-gate FET, or maybe even a JFET preamp feeding a diode mixer. In either case, use a JFET xtal LO. The diode mixer requires more LO injection than the dual-gate MOSFET; it probably is overkill. Be sure to put a reasonable filter on the front end; a low-pass/high-pass with a few poles each would probably be more than enough to suppress what little bit of image energy you'd encounter in the 236-254Mhz band. The only other problem you'll have to deal with will be IF feedthrough in the 136-154Mhz band; the DBM mixer helps a bunch with this but the NE602 is liable to overload, particularly with the wide band receiver. I guess a diode mixer would be the best solution for this...

---
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

103. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 12:10:40 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-758635834@unomaha.edu>
Source record: 118891
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

```
Posted-By: auto-faq 3.1.1.4
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
==========

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

104. PolyPaks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 12:14:03 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Jan15071403@splinter.coe.neu.edu>
Source record: 118892

Hi:
Does anyone remember PolyPaks? They used to sell parts grab bags. Are
they still around?

-Dean

105. Re: PolyPaks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 19:20:17 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCJor1v.DJz@netcom.com>
Source record: 118893

In article <DEAN.94Jan15071403@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:
>Hi:
> Does anyone remember PolyPaks? They used to sell parts grab bags. Are
>they still around?
>
Yea, I remember them, they were pretty bad. A lot of the stuff they had was marginal or defective. Be thankful they're not around anymore :-)

106. Assorted questions..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 21:51:54 UTC
From: jangus@skyld.tele.com
Message-ID: <758670714snx@skyld.tele.com>
Source record: 118895

In article <1994Jan13.104845.5353@hemlock.cray.com> andyw@aspen32.cray.com writes:

> One last question (I promise):
> Does Fluke (in the US) have a spare parts phone number ? I've
> got an old Fluke DMM, with a cracked LCD display that I'd like
> to fix.

I replaced the LCD in my 8012A bench meter. Call Fluke Industries at
1 (800) 526-4731
You can order right then with a credit card and have it the next day!

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

107. Need Repair Info for Monitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 21:54:21 UTC
From: jangus@skyld.tele.com
Message-ID: <758670861snx@skyld.tele.com>
Source record: 118896

In article <-299209999@hpcvra.cv.hp.com> steveh@hpcvra.cv.hp.com writes:

> A few years ago, I bought a new Commodore C-64 for the kids,

> computer games... Anyway, a couple of years went by, and
> the nice little Samsung composite color monitor that we
> bought with the system just up and died. Being an EE myself

Just open 'em up and see what's going on inside. Most of these types of monitors are completed automated assembly except for the flyback trans. My Commodore monitor died when the lead that hadn't been soldered finally got gungy enough to not conduct anymore.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

108. Re: PolyPaks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-15 22:48:45 UTC
From: paul@alantec.com
Message-ID: <paul.758674125@alantec.alantec.com>
Source record: 118894

In article <DEAN.94Jan15071403@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:

>Does anyone remember PolyPaks? They used to sell parts grab bags. Are
>they still around?

"We dunno what they are, but we've got BARRELS of them!"

sheesh.

~!paul
--
Paul Ziemba, software archaeologist: paul@alantec.com alantec!paul
"The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man." - George Bernard Shaw

109. Re: Midland 13-509 220Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 00:13:30 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Jan16.001330.5941@grian.cps.altadena.ca.us>
Source record: 118897

jra@lawdept.daytonoh.ncr.com (John R. Ackermann) writes:

>In article <940111060423177@pubcon.fort-worth.tx.us> gary.higgs@pubcon.fort-worth.tx.us
(GARY HIGGS) writes:

>>I am looking for documentation for making the Midland 13-509 220
>>mobile into a repeater. If you are familiar with this rig, I'd like to
>>hear from you. Thx and 73

>There was a TAB book published in the early 80s called something like "The
>Complete Guide to FM Repeaters," by Bill Pasternak WA6ITF
>and someone else.
^^^^^^^^^^^

I'm the someone else. I did 11 chapters in the book, and
some of 5 more. It was book number 1212.

>Like most TAB books, it has its load of typos, misidentified figures, and
^^^^^^^^^^^^^
Like 130 in the first 250 pages? Like not one of my schematics made it
into print without at least 2 errors?

>misinformation, but it does have a chapter on converting the 13-509 to
>repeater service. Dunno if it's still in print, though.

>You might also check out the "220 Notes" publication that comes (came) out of
>Chicago. That had lots of articles on 13-509 mods.

The 509 is your basic 12 channel crystal controled CB radio redesigned
for 220mhz. The repeater mods basically entailed remanufacturing the
transmitter for continuous duty (bigger heat sink, basically) and
cleaning up the spectrum (replace all the bypass caps, basically). The
RX local oscillator was spurry, causing multiple channel receive.
Changing a few resistor values and better bypassing fixed that.

Ray Von Neumann K6PUW designed a receiver for 220 that was described in
the book. Unfortunately the 3 paragraphs that stated whose design it
was, and gave contact info for him didn't make it past the editor.
Ray's receiver was the absolute top performer of it's day and is still
in use at that repeater. The transmitter exciter was a totally
re-engineered 13-509 TX followed by a 75w amplifier.

A better choice for a TX is to locate a Motorola U43MSN Motran and
convert the transmitter (basically cut out 5 capacitors, change the
crystal to one cut for about 149mhz (223.xxx/3 * 2), and retune)
Midland xtals can be used to test with, but will drift excessivly.
Expect 15-18w - fan required. Use two - one will fail eventually. Have

some kind of a airflow switch or a thermal cutout. The Moto PA transistors are rather expensive these days.... and Motran - specific parts are NLA.

The Moto MSN RX can be converted, but requires serious work on the front end helicals. If you want to do it, first locate a Microflame torch, or some other oxygen-assisted propane torch with a pinpoint flame. Oxy-acetelene might be too hot, but you need a hot flame no bigger than 3/4" long and small in diameter. A standard propane torch is about 10x too large. Picture a flame about the size of a knitting needle, and just as controllable. You have to unsolder the helical resonators in the front end, modify them and resolder them back in. The wire is about 10 to 12 gague and soldered to a heavy metal casting. Then you modify the LO multiplier to triple from 70mhz instead of doubling, and change the crystal and retune. Optionally for peak performance you need a drill press: the ports between the helical resonator cavities are sized for highband and are too large. The simple solution is to drill and tap a 6-32 hole in the lid, and run a screw into the "window". Tune the RX with the screw flush with the bottom of the cover plate, then run each screw in s-l-o-w-l-y until the sensitivity peaks for that stage, then tighten a lock nut. Repeak everything 2 or 3 times. The additional work to reduce the size of the ports doesn't buy much - a good GasFET preamp gets you much more.

The absolute best commonly available receiver for 220 is a modified Moto HiBand MICOR. If you can find one, get one for 160-170mhz - you will have fewer parts to change in the multiplier chain.
I have a Word Perfect file on the entire mod - the basic info is out of Tennesse, as I remember... The front end section also needs the MicroFlame torch trick to do it right, but the helicals _can_ be modified in place if you are very^2 careful (the MSN front end was about 4x4" where the Micor is about 1.5" by 6" - the Micor front end is much easier to butcher). Again, for best performance a good preamp needs to be used.

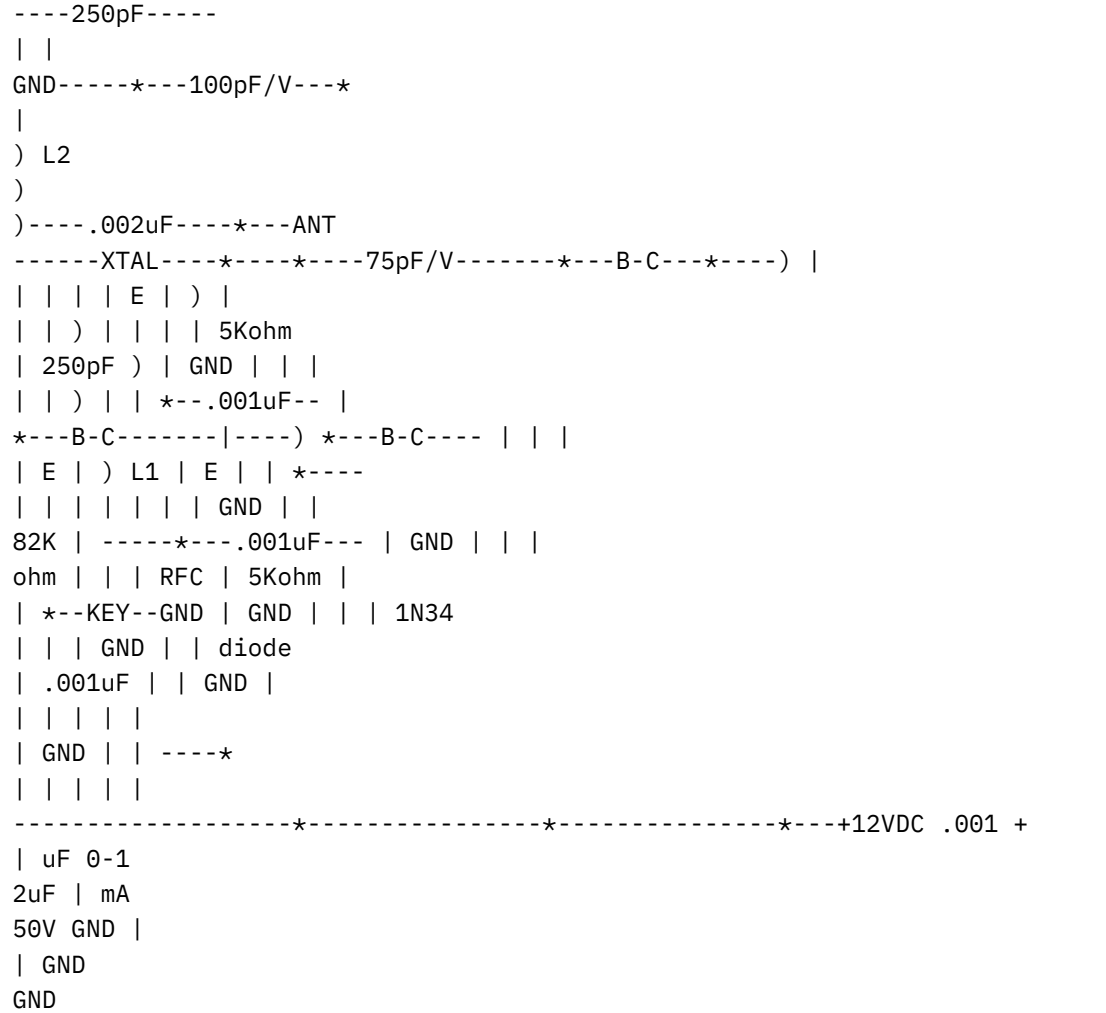
If anybody is really interested, e-mail me.

I've written TAB and offered to redo the book with up-to-date info, including much more info on repeater controllers (including computerized repeater controllers), but TAB (now a division of McGraw-Hill, as I remember) is not interested.
--
Mike Morris WA6ILQ | This space intentionally left blank.
PO Box 1130 |
Arcadia, CA. 91077 | All opinions must be my own since nobody pays
818-447-7052 evenings | me enough to be their mouthpiece...

110. PROJECT 13: ANOTHER 80M TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 00:51:10 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CJp6DB.CJ8@news.Hawaii.Edu>
Source record: 118908

Gang,
Here's another 80M xmtr; this one's supposed to be capable of 1-2 watts.
I got this out of a book called ``1000 Transistor Circuits'' or something
like that.



The 3 transistors are 2N2270. Two capacitors show: /V - means variable.
L1 is 30 turns on a B&W #3012 coil form, with a tap 10 turns from bottom.
L2 is 18 turns on a B&W #3015 coil form, tapped 3 and 7 turns from bottom.
Only numerical values were given for the capacitors so I've interpreted
this as ``whole number values are in pF and decimal values are in uF'',
except the 2uF 50V cap - that was specified.
The 1N34 diode's symbol should be oriented: \ /
\/

|

to meter

Now yank that 3579 kHz crystal out of your color TV set and have fun!

Jeff NH6IL/QRP

111. Gel Cell/ charge with power supply?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 02:18:38 UTC
From: jsteinhu@nyx.cs.du.edu
Message-ID: <1994Jan16.021838.28917@mnemosyne.cs.du.edu>
Source record: 118898

I have a Sealed lead-acid battery (Panasonic LCR12V17AP, 12v, 17Ah/20HR
, Constant voltage charge, Voltage regulation for cycle use 14.6v-15.0v,
for standby use 13.6V-13.8V, Inital current less then 6.8Amp). I wish
to use it as a means to both run higher amperage applications then my
2.5amp power supply (regulated @ 13.5V for 2.5amps load) will allow (the
modes would be SSB, packet, interrmitent FM voice) and also occasionlly for
emergancy power.

Is there a way that I can use my current power supply as a 'charger' to keep it
at full charge? How about if it gets drained? Anythings I shouldn't do? (Ie
I am sort of kicking around connecting the load, power supply and battery
in parrale but that doesn't quite sound right.. (Would the battery try to
chrage the supply?)
Thanks a lot for any help etc..N1MAM
--
jsteinhu@nyx.cs.du.edu

112. Re: Gel Cell/ charge with power supply?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 15:26:54 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan16.152654.20817@ke4zv.atl.ga.us>
Source record: 118900

In article <1994Jan16.021838.28917@mnemosyne.cs.du.edu> jsteinhu@nyx.cs.du.edu (Josh Steinhurst) writes:
>Is there a way that I can use my current power supply as a 'charger' to keep it
>at full charge? How about if it gets drained? Anythings I shouldn't do? (Ie
>I am sort of kicking around connecting the load, power supply and battery
>in parrale but that doesn't quite sound right.. (Would the battery try to
>chrage the supply?)

You bet it will, and if the supply is the RS model, that'll trash the regulators. What you want to do is put a steering diode between the PS and the radio/battery. Use a low drop Shottky diode, or a selenium rectifier, to keep the voltage drop reasonable. Alternatively, you can use an ordinary silicon diode and modify the PS to put out 0.6 volts more than normal to compensate, should be 14.4 volts so the battery sees 13.8 volts float. If power to the PS fails, the diode will keep battery voltage from entering the supply and wrecking it.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

113. toroids, alternatives? Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 15:45:56 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan16.234556.1@ntuvax.ntu.ac.sg>
Source record: 118899

Hi,
I live in a part of the world where toroids and other ferrite type inductors are difficult to come by. This makes it especially difficult for us to construct projects involving these components. Even trying to wind a balud is tough when one cannot
find the right components. In this situation, is there an alternative to using toroids? Could"we makeur own toroids? How do w��go
about ordering them and what kind of waiting period can we expect? Tks. Would appreciate any advise.

73 de 9VG (Singapore, South East Asia) Daniel

114. Ten Tec kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 16:31:12 UTC
From: bonesigh@mindvox.phantom.com
Message-ID: <Pq89Fc1w165w@mindvox.phantom.com>
Source record: 118901

I've seen Ten Tec announcing that they have a new kit catalog available.
Has anyone received a copy of their catalog? Anything interesting?
73 de Mike, W2VD

115. Re: Gel Cell/ charge with power supply?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-16 18:25:00 UTC
From: wramsdel@nyx.cs.du.edu
Message-ID: <1994Jan16.182500.25932@mnemosyne.cs.du.edu>
Source record: 118902

I have a bunch of 1N5407s (rectifier diodes) that Digi-Key rates at 3A av

rect. current, 800V rev. voltage, and 1.2V fwd. voltage. Will these work for this application? What significance does the fwd. voltage have? Finally (please excuse my ignorance) I assume that you would connect the cathode to the battery, and the anode to the P.S., and give them a common ground. Finally, a semi-unrelated question: I have a 12 volt, 5ah gel cell that I would like to use for this, but the fully charged terminal voltage is only 11V. How do I restore it to full capacity? (I know I've seen this thread before, but unfortunately, I didn't pay much attention.) Thanks in advance for any replies.
--Ward, KD1RX

p

116. Re: Gel Cell/ charge with power supply?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 04:00:23 UTC
From: rwb@alexander.VI.RI.CMU.EDU
Message-ID: <CJr9so.C74.2@cs.cmu.edu>
Source record: 118905

In addition to the blocking diode mentioned by another poster,
you also need a way to limit the current the battery will draw
from the supply when it is drained. All this was shown in QST
about a year ago.

A suitable current limiter is a couple of 1A 12V incandescant bulbs
in parrallel with each other and placed in series with the supply
output.

117. ADC0844LCN modes, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 06:06:14 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan17.140614.1@ntuvax.ntu.ac.sg>
Source record: 118906

Hi,
Does anyone know how to program the different sampling modes for
the ADC0844lCN A/D convertor? Howmany modes are supported etc. Tks.

73 de 9VG Daniel

118. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 06:27:15 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.758788035@bauv106>
Source record: 118907

In article <2h2003$o20@darkstar.UCSC.EDU> James H. Haynes
<haynes@cats.ucsc.edu> writes:

> In article <claude.758268586@bauv106> claude@bauv.unibw-muenchen.de
> (Claude Frantz) writes:
> >What do you mean with "FSK" vs. "ASK" detector ? A Travis
> >discriminator is usualy considered a FM discriminator i.e. a FSK
> >discriminator, but it is not more and not less as a pair of AM
> >detectors associated with a pair of resonant circuits tuned to
> >slightly different frequencies. In his very interesting serie of
>
> Well in a typical FSK receiving setup you have the bandwidth of the
> receiver, and then perhaps a bandpass filter (which might be flat-topped
> or two-peaked), and then a limiter, and then the pair of tuned circuits
> which constitute a discriminator. In this case FM limiter capture takes
> effect, so whatever signal is strongest at the input to the limiter will
> dominate the output.

It is difficult to predict exactly the behaviour in presence of QRM,
mainly because the QRM can only be defined exactly in theory.
Surprising effects can be encountred in the real world.

> I don't know if any theoretical work has been done
> about the concepts of non-flat-bandpass pre-limiter filtering, or on
> nonlinear discriminators.

I known about few articles:

H.A. Ross, "The theory and design of Intermediate-Frequency
transformers for Frequency-Modulated Signals", A.W.A. Technical
Review, Vol. 6, No. 8, 1946.

P. Guettinger, "Die Verzerrung frequenzmodulierter Signale bei der
Bandfilteruebertragung", Brown Boveri Mitteilungen, Aug. 1946,
pp. 185.

> On the other hand, you might have a non-limiting path from the receiver
> output through a pair of filters, each with an amplitude detector;
> and you don't necessarily combine the detector outputs by simply subtracting.
> You might, for instance, use logic such that if both detectors say mark
> you output mark; if both say space you output space; if they don't agree
> you output mark. Or you might decide which to believe by seeing which
> recently had the stronger signal.

Usualy the output of both detectors is subtracted immediatly, then
passed trough a low-pass filter before the logic operations mentioned
above are performed.

> TUs of both kinds have been built, or TUs where the limiter can be switched
> off. As I recall the limiter on gives best results if you can keep the
> desired signal stronger than the interference; and the limiter-off gives
> better performance when the desired signal is weak, but usually at that point
> copy is so crummy anyway that you might as well give up.

That is exactly the most interesting case: to copy or not in marginal
situations.

> I did some experimenting years ago with positive feedback around the
> limiter and its input filter. There were some papers by Elie J. Baghdady
> of MIT in the late 1950s on this topic which suggested that the best
> performance was to be had with just enough positive feedback around the
> limiter to cause oscillation in the absence of input. (IEEE Transactions
> on Communication, if I remember correctly) I didn't have the smarts nor
> the test facilities to make any measurements you could hang your hat on; but
> it did seem qualitatively that the feedback helped.

This is very interesting. Do you remember the 6DT6 tube ? This effect
is usually encountred with typical circuits associated with this tube.

--
Claude F.

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

119. VLF Public Band...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 07:33:19 UTC
From: elassley@nde.unl.edu
Message-ID: <2hdf00$idm@crcnis1.unl.edu>
Source record: 118822

Hello all...years back I remember reading someplace that there is an experimental VLF (Very Low Frequency) public band for anyone to use at any amount of power. The range was about 300 miles and you would make these xmitters and receivers quite cheaply. Can anyone give me more info on this and tell me where I mite find the article. I have no idea what mag it mite have been in. Thanks...

--
| // // ONLY AMIGA *-=>SS<=-* Imperial Realm: 402-223-2089 |
| _ // // MAKES IT ********** Where you going now? When you |
| \\//\\// POSSIBLE!! *-KB0DMU-* get to the top of the hill, |
| \/ \/ ********** gonna be there yes I will. - DY |

120. 5 sequential tone decoder IC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 08:58:37 UTC
From: hschu@sunrise.rz.uni-ulm.de
Message-ID: <2hdjvu$hr0@wega.rz.uni-ulm.de>
Source record: 118909

Hello Netlanders,
I am looking for an IC which allows decoding of the 5-tone sequential pager codes which are particularly popular over here in Europe with public safety agencies, but I have heard them in the US as well. My two pagers are made by Motorola, anyway.

The project behind it is an alarm repeater for the mountain rescue group I work with.

Thanks in advance!

Best regards,
Hermann
DF2DR

--
Hermann Schumacher | hschu@sunrise.e-technik.uni-ulm.de
Dept. of Electron Devices and Circuits| hschu@dulruu51.bitnet
University of Ulm, | office: +49 731 502-6152
D-89069 Ulm, Germany | FAX: +49 731 502-6155

Help fight leukemia - we're closing in on a killer!

121. Surplus oscilloscope HP 150A.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 10:00:32 UTC
From: garret@strobe.ATC.Olivetti.Com
Message-ID: <2hdnk0$j82@olivea.ATC.Olivetti.Com>
Source record: 118910

Hello !!!
Last week i found a old oscilloscope HP 150A whit vertical plug in
HP 152A and HP 151A. It' s in ok condition, but i don't know this instruments.

I need information about this oscilloscope.
Thank in advance.

Bobba Claudio from OLIVETTI S.P.A.
via montalenghe Scarmagno (TO) Italy

122. ECG Information please.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 13:54:50 UTC
From: dc562@cleveland.Freenet.Edu
Message-ID: <2he5ba$93a@usenet.INS.CWRU.Edu>
Source record: 118912

I would like to have substitutions for the following and maybe ones that can
be found at Radio Shack.
ECG 102
125
5401
312
129
109
1100
703A

Thanks in advance :-) Rob
--
Robert E. O'Hara AA8IB
dc562@cleveland.freenet.edu
aa8ib@n8apu.oh.na

123. Re: toroids, alternatives? Help! ... On scrounging

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 14:20:27 UTC
From: <>
Message-ID: <CJs2I3.JKK@walter.bellcore.com>
Source record: 118913

Summary:
Expires:
References: <1994Jan16.234556.1@ntuvax.ntu.ac.sg>
Sender:
Reply-To: cotton@thumper.bellcore.com (Chase Cotton)
Followup-To:
Distribution:
Organization: Bellcore, NJ
Keywords:

In <1994Jan16.234556.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:

>> I live in a part of the world where toroids and other ferrite
>> type inductors are difficult to come by.
...
>> In this situation, is there an alternative to using toroids?
...
>> 73 de 9VG (Singapore, South East Asia) Daniel

Daniel,

On scrounging,

You might try to use ferrite rods (sticks) which can always
be found in old, junk AM radios. These ferrite alternatives
will still have the property of reducing the required number
of turns to make a particular inductance.

Unfortunately, the rods will not have the self-shielding
property that the toroids have. This may be why most rod-type
IF transformers are inside an aluminum shield box.

Another problem is that ferrite materials are usually made
in several different "flavors" for different frequency ranges.
Thus, the "junk" AM rods may not work for higher frequency
(UHF/VHF) applications.

But it is worth a try while you are waiting for the slow boat
to arrive with your purchases.

AHH HAA ... Just had a great idea. Go find some dead switching
power supplies (in any PC, terminal, or disk drive box). Each
will have several toroidal inductors! Likewise, some modern,
high-end computer cables (crt, disk, keyboard) will have a pair
of toroidal inductors inside the cable's plastic skin near each
end of the cable. These toroids may be split in half. Don't
buy new ones, just try to find dead ones.

Good luck,

Chase Cotton
cotton@thumper.bellcore.com

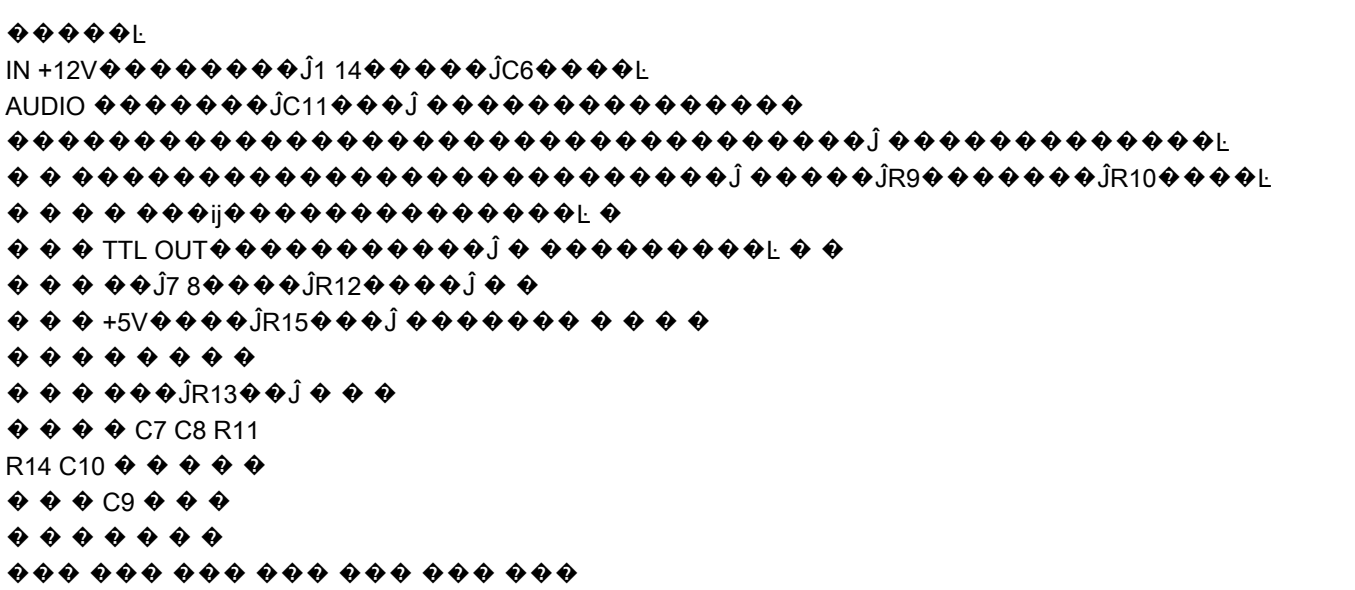
124. XR2211 RTTY

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 15:33:00 UTC
From: maurice.hayman@ENEST.COM
Message-ID: <53.811.4647.0N1FCBBE@ENEST.COM>
Source record: 118841

.225614.1@ntuvax.ntu.ac.sg>
Newsgroup: rec.radio.amateur.homebrew
Organization: Nanyang Technological University - Singapore

Can anyone send me any circuit for RTTY decoding based on the XR2211? Please
include as much info on the circuit as
possible, especially calculations for frequencies if possible. Tks.

DEMODULATOR USING XR-2211



R9 = 220K
R10= 15K NOTES: PINS 10 AND 11 DO NOT CONNECT
R11= 20K R11 IS MULTITURN POT
R12= 100K C6 MUST BE STABLE CAPACITOR
R13= 470K C9 IS FOR 110 ASCII/BAUDOT OR LESS
R14= 470K I SWITCH TWO CAPS AT C9 FOR LOW SPEED AND HIGH
R15= 10K SPEED USING .047 AND .0047(HIGH) 300 ASCII/BAUDOT

C6 = .022 ADJUSTMENT:
C7 = .0047 POWER TO PIN 1, ADJUST R11 FOR CLEAN COPY
C8 = .1 (I USE A STRING OF *U FOR ADJUSTMENT AT 110 ASCII)
C9 = .047
C10= .05
C11= .1

THE XR2211 WILL BLOW IF MORE THAT 2V PEAK AUDIO IS APPLIED.

125. Re: VLF Public Band

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 18:03:09 UTC
From: scottcr@wkuvx1.wku.edu
Message-ID: <1994Jan17.120309.10147@netnews.wku.edu>
Source record: 118911

In article <2hdf00$idm@crcnis1.unl.edu>, elassley@nde.unl.edu (erin lassley) writes:
> Hello all...years back I remember reading someplace that there is an
> experimental VLF (Very Low Frequency) public band for anyone to use at any
> amount of power. The range was about 300 miles and you would make these
> xmitters and receivers quite cheaply. Can anyone give me more info on this
> and tell me where I mite find the article. I have no idea what mag it mite
> have been in. Thanks...
>
> --
> | // // ONLY AMIGA *-=>SS<=-* Imperial Realm: 402-223-2089 |
> | _ // // MAKES IT ********** Where you going now? When you |
> | \\//\\// POSSIBLE!! *-KB0DMU-* get to the top of the hill, |
> | \/ \/ ********** gonna be there yes I will. - DY |

160-190 khz is available with power input of 1 watt or less, *AND*

combined antenna/feedline length of 50 feet. The power limitation is
not nearly as bad as the 50 foot rule: it is very hard to get much
efficiency with an impedance of .1 ohm!

NDBs that operate 200-400 khz with 50 watts get about 20% efficiency
from a fifty foot tall by 150 foot long flat-top, with a full
number radial ground-system!

--
SCOTTCR@WKUVX1.WKU.EDU aka Chris Scott- C/E Public Radio- Western KY U
Telco: (502) 745-3834 Hm & Fax: (502) 781-1232
...just another insignificant VAX user. \\\//
(o o)
--ooO-(_)-Ooo----------------------

126. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 20:46:52 UTC
From: cleveland@gvg47.gvg.tek.com
Message-ID: <8091@gold.gvg.tek.com>
Source record: 118915
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Re: Portable 2m Antenna for Mountaineering???

Two items come to mind: 1) MFJ makes a portable beam in which the elements store in the boom. Haven't tried it but I do have a portable beam that works well. 2) Larsen Antennas makes a roll-up half-wave that you hang from a tree limb. Nice if you have trees nearby.

Grover
WT6P

127. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-17 21:02:54 UTC
From: alanb@sr.hp.com
Message-ID: <CJsL4v.GA4@srgenprp.sr.hp.com>
Source record: 118914

James H. Haynes (haynes@cats.ucsc.edu) wrote:

: In article <claude.758268586@bauv106> claude@bauv.unibw-muenchen.de (Claude Frantz) writes:

: TUs of both kinds have been built, or TUs where the limiter can be switched
: off. As I recall the limiter on gives best results if you can keep the
: desired signal stronger than the interference; and the limiter-off gives
: better performance when the desired signal is weak, but usually at that point
: copy is so crummy anyway that you might as well give up.

That was my experience. Years ago, when I was active on RTTY, I used a commercial demodulator that had both modes. Despite the enthusiastic claims of much-improved performance in AM detection mode, I found the advantages to be minimal to non-existant on typical on-the-air signals.

AL N1AL

128. Looking for 40+ KHZ 10.7Mhz IF filter for APT sats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 03:05:58 UTC
From: Dino Moriello <dino@cam.org>
Message-ID: <2hfjmm$d5m@Tandem.CAM.ORG>
Source record: 118916

I'm looking for a 10.7 Mhz IF bandpass filter with a bandwidth greater
than 30Khz, preferably 50Khz for rxing WEFAX NOAA APT satellite signals.
Any ideas on where I could find such a beast. A complete radio could
also be
considered.

Thanks, Dino, VE2DM ;

129. Looking for P8000 fets...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 07:06:09 UTC
From: stkaba@uta.fi
Message-ID: <2hg1p1$n8o@vuokko.uta.fi>
Source record: 118818

Hi, I am looking for P8000 fets for RF front end ampl,
some of them I have are made by TI.
Any help or mail order source would be fine ?

Regards

Kari Back

130. Re: 5 sequential tone decoder IC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 08:10:44 UTC
From: davidj@rahul.net
Message-ID: <CJtG1w.22n@rahul.net>
Source record: 118917

In <2hdjvu$hr0@wega.rz.uni-ulm.de> hschu@sunrise.rz.uni-ulm.de (Hermann Schumacher) writes:

>Hello Netlanders,
>I am looking for an IC which allows decoding of the 5-tone sequential
>pager codes which are particularly popular over here in Europe with

I don't know of any IC that does this, but Communications Specialists has a line of paging and tone encoder/decoders that *I think* includes a 5-tone decoder. They are in Orange, CA at 1-714-998-3021, fax 1-714-974-3420.
--
David Josephson <david@josephson.com>

131. MODS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 12:22:28 UTC
From: G.GUILD@DARESBURY
Message-ID: <G.GUILD-180194121850@148.79.116.32>
Source record: 118819

CAN ANYBODY PLEASE HELP ,ANY MODS FOR A KENWOOD TR7600 2MTR RIG MYBE
THINKING OF EXTENDED RECEIVE.

132. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 13:46:34 UTC
From: n4hy@tang.ccr-p.ida.org
Message-ID: <N4HY.94Jan18134634@tang.ccr-p.ida.org>
Source record: 118829

Rick says:

>There are some FM video demodulator IC's that were introduced a few years
>ago (by Philips or Plessey, I can't remember for sure) that used oscillating
>limiter front ends followed by PLLs. They had substantially lower thresholds
>that most other demods when used for TVRO receivers. So I think Baghdady's
>paper (March 1958 Proc. IRE, I believe) has some validity. By the way, it
>was based on an earlier (1956?) Baghdady paper that was based on a ~1953
>paper by some other author.

>However, it is not obvious to me that threshold effect is relevant to FSK
>reception.

>Rick Karlquist N6RK

Of course it is relevant. You are never really transmitting discontinuous
frequency (bandpass, .etc) and in the case of the PLL demods, you will reach
a point where cycle slippage begins to kill you. ANYTHING you do to depress
the likelihood of cycle slippage in a PLL demod will be a major win. I
have written FM (FSK) discriminators based on a fully nonlinear model for
the phase locked loop (rather than the usual linearizing assumptions). The
problem becomes seriously nonlinear when you are in the transient region
just before coming into lock or just after falling out. If you make
use of this area with a nonlinear filtering scheme, you can significantly
depress the threshold. The papers you cite are indeed interesting. Thanks.

Bob
--
Robert W. McGwier | n4hy@ccr-p.ida.org Interests: ham radio,
Center for Communications Research | scouts, astronomy, golf (o yea, & math!)
Princeton, N.J. 08520 | ASM Troop 5700, ACM Pack 53 Hightstown
(609)-279-6240(v) (609)-924-3061(f)| I used to be a Buffalo . . . NE III-120

133. Re: Gel Cell/ charge with power supply?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 14:31:56 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan18.143156.29821@ke4zv.atl.ga.us>
Source record: 118821

In article <1994Jan16.182500.25932@mnemosyne.cs.du.edu> wramsdel@nyx.cs.du.edu (Ward Ramsdell) writes:
>
>I have a bunch of 1N5407s (rectifier diodes) that Digi-Key rates at 3A av
>
>rect. current, 800V rev. voltage, and 1.2V fwd. voltage. Will these work
>for this application? What significance does the fwd. voltage have?

This would not be the best choice. The forward voltage drop of 1.2 is excessive. I'd tend to use a diode with about a 10 amp rating and a forward drop of 0.2 volts (Shottky or germanium) for this application. The forward drop of a diode is essentially constant regardless of current draw, so if your supply put out 13.8 volts, you'd only get 12.6 volts on the other side of the diode. And the diode will dissipate the power represented by the forward drop times the current, so at 2.5 amps you'd need to heat sink the diode for a 3 watt dissipation. That's not bad, but a diode the size of a 1/4 watt resistor would tend to run pretty hot dissipating 3 watts. Thus the recommendation for a higher current rated diode because they normally come in packages designed to dissipate more power safely.

>Finally (please excuse my ignorance) I assume that you would connect the
>cathode to the battery, and the anode to the P.S., and give them a common
>ground.

Yes. Here's some ASCII art(?).

```
diode
PS+ ---->|--x----radio+
|
(L)
|
+Bat
-Bat
PS- --------|----radio-
```

L is an auto tail lamp for current limiting if the battery is dead. Note, if the PS has internal current limiting, you can disregard the lamp. You can also put a switch to short out the bulb for times when you want to run straight off the battery. That'll save the power lost in the lamp. For a low power radio, the lamp can be left in place with minimal loss.

Finally, a semi-unrelated question: I have a 12 volt, 5ah gel
>cell that I would like to use for this, but the fully charged terminal
>voltage is only 11V. How do I restore it to full capacity? (I know I've
>seen this thread before, but unfortunately, I didn't pay much attention.)

>Thanks in advance for any replies.

You can't. You have a shorted cell. Discard the battery.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

134. MODS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 15:08:51 UTC
From: G.GUILD@DARESBURY
Message-ID: <G.GUILD-180194150607@148.79.116.32>
Source record: 118820

PLEASE CAN ANYBODY HELP ,ANY MODS FOR THE KENWOOD TR7600 2M RIG MY BE
THINKING EXTENDED RECEIVE.

135. Re: Global Alert For All: Jesus is Coming Soon

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 16:29:49 UTC
From: kg7bk@indirect.com
Message-ID: <CJu35q.JM9@news.direct.net>
Source record: 118823

Clarence L. Thomas IV (clarence@orion.cc.andrews.edu) wrote:

(a bunch of stuff he can't prove that has absolutely no relevence to hams.)

Funny, I've never heard God or Jesus on ham radio...what are their calls?
If they're not hams or potential hams, then they don't belong here.
These groups are about sharing knowledge and faith is not a tool of knowledge.

73, Cecil, kg7bk@indirect.com

136. Alternator Whine, TR-7600/7625

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 19:39:33 UTC
From: lu7akc@asarin.ORG.AR
Message-ID: <gate.moJDgc1w165w@asarin.org.ar>
Source record: 118826

SB-039

Alternator Whine, TR-7600/7625 7-9-79

In some mobile installations, alternator whine may be heard during transmit. External B+ filtering does not have sufficient effect.

In some instances, using the cigarette lighter will cause this problem. Running off the fuse block, and even directly from the battery may still not eliminate the noise.

First, check power line routing in the engine compartment. It should be kept clear of all secondary HV harness wiring, and clear of the alternator, regulator, and ignition primary circuits. Careful routing should reduce or eliminate noise coming in through the power line.

Check for clean ground connections at the antenna and radio.
Check for clean and tight battery connections.

If all of these measures fail, replace L22 on the VCO unit X50-1580-10 from the original green coil, to either an orange or black coil. No adjustments should be necessary.

Old part number L40-1021-03 1mH
New part number L40-1021-43 1mH

Please make these changes in your service manual.

JEB/yn
(c) 71079TKC

137. TR-7600/7625 Audio Tone on TX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 19:39:35 UTC
From: lu7akc@asarin.ORG.AR
Message-ID: <gate.ooJDgc1w165w@asarin.org.ar>
Source record: 118824

SB-045

TR-7600/7625 Audio Tone on TX 8-10-79

Some TR-7600/7625 users report a low background tone during TX, especially noticable at full quieting by the receiving station.

On the PLL unit X50-1580-00, change:

L18 from 22 uH to 33 uH
C61 from 22 pF to 33 pF
C60 from 22 pF to 10 pF
C42 from 22 pF to 39 pF, or bridge 18pf across foil side and leave original C42 in place. No adjustment is necessary.

New part:
L18 33uH L40-3301-03

Please annotate your service manual.

JEB/yn
(c) 8979TKC

138. TR-7600/7625 Optional Ceramic Filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 19:39:37 UTC
From: lu7akc@asarin.ORG.AR
Message-ID: <gate.qoJDgc1w165w@asarin.org.ar>
Source record: 118825

SB-050

TR-7600/7625 Optional Ceramic Filter 8-9-79

Adjacent channel rejection may be improved by changing one capacitor and
installing an optional narrow ceramic filter.

On the TX RX unit X44-1320-10, change:

* L41, CFG-455 F2 to CFL-455F
* C101, from 470pF to .001uF

Old part L41 L72-0309-05 CFT-455 F2
New part L41 L72-0306-05 CFL-455 F
Please annotate your service manual.

JEB/yn
(c) 8679TKC

139. 51' Tower For Sale w/ House

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 22:40:54 UTC
From: eruben@us.oracle.com
Message-ID: <1994Jan18.224054.4301@oracle.us.oracle.com>
Source record: 118828
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.packet,rec.radio.amateur.policy

I realize that this in not a forum in which the advertisement of houses for sale is a generally accepted practice. However, this particular house would be ideal for those who have always wanted a tower to put an antenna on. The tower is a 51' three-section hand-cranked unit. It is mounted on an approx. 6'x3' slab which is as much as 6' deep directly under the tower. It was installed with all the necessary permits. The house is being sold by my parents who have just retired and are moving to the Sierras. I have included the information from the realtor's flyer below:

Unique Home situated on an Extra-Large Corner Lot in the "North Gate" area of Fremont. It's conveniently located within walking distance to schools, shopping, an AC Transit Bus Stop, and just minutes away from I-880, I-84, the Dumbarton Bridge, and B.A.R.T. for the commuter in the family.

Features...
* 4 Bedrooms (1 Bedroom currently being used as a Photo Darkroom)
* Tiled Entry Foyer
* Window Coverings
* Family Room w/ Chicago Brick Fireplace
* Interior Painted Approx. 5 years ago, some areas within the last year.
* Kitchen Includes: Built-In Range/Oven w/New Range Hood, Dishwasher, Tiled Counter Tops, and Dining Area
* 2-Car Garage w/ Auto Door Opener, Some Storage Cabinets & Shelves
* 2 Baths w/ New Sinks, Commodes, Shower Tile, & Lino Floor Covering
* Hardwood Floors Throughout with Some W/W Carpeting & Linoleum.
* Formal Living Room
* Composition Roof 3 Years New
* Extra Large Lot w/ Auto Timed Sprinklers & Drip Water System in both the Front & Back Yards
* Backyard has Patio, Fruit Trees, a Storage Shed and 51' Ham Radio Tower
** Approx. 1504 Sq. Ft. of Living Area **

Asking $219,950

For Additional Information or Financing, Please Contact:
Babe King
(510) 794-1300 Office Coldwell Banker
(510) 656-8751 Home 3340 Walnut Avenue Suite 110
(510) 475-2594 Voice Mail Fremont, CA 94538

Information Deemed Reliable, But Not Guaranteed.

Thanks for listening and I apologize if I've offended anyone by placing this ad in your newsgroup.

140. Rebuilding Heath Warrior

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-18 22:57:11 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Jan18.225711.15797@osuunx.ucc.okstate.edu>
Source record: 118827

After removing a lot of relay's and finding the filiment xformer for the 811A' bad I have a problem. I have a transformer 6.3 v 12 amps no center tap and a 6.3 v 3amp xformer with a center tap. My question is can I connect the two transformers togeater in parallel and in phase and ground the center tap of the 3 amp xformer and make things work right?
Thanks
Gordon AB5Dg

/* Gordon Couger */
/* Biosystems & Agricultural Engineering */
/* Oklahoma State University */
/* 114 Ag Hall, Stillwater, OK 74074 */
/* gcouger@olesun.agen.okstate.edu 405-744-9763 day 624-2855 evenings */
/* I Speak only for myself and not for anyone else */

141. Re: 5 sequential tone decoder IC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 01:03:49 UTC
From: carl@phantom.com
Message-ID: <2hi0tl$kn9@dockmaster.phantom.com>
Source record: 118830

Hermann Schumacher (hschu@sunrise.rz.uni-ulm.de) wrote:
: Hello Netlanders,
: I am looking for an IC which allows decoding of the 5-tone sequential
: pager codes which are particularly popular over here in Europe with
: public safety agencies, but I have heard them in the US as well. My
: two pagers are made by Motorola, anyway.

Hmmm, possibly MX-COM
919-744-5050
They used to have stuff like that.

-carl-

142. Re: Looking for 40+ KHZ 10.7Mhz IF filter for APT sats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 03:06:24 UTC
From: Steve Kittelsen <SAK1@delphi.com>
Message-ID: <940118.79584.SAK1@delphi.com>
Source record: 118831

Dino Moriello <dino@cam.org> writes:

>I'm looking for a 10.7 Mhz IF bandpass filter with a bandwidth greater
>than 30Khz, preferably 50Khz for rxing WEFAX NOAA APT satellite signals.
>Any ideas on where I could find such a beast. A complete radio could
>also be
>considered.

I use a Cobra Scanner SR-900 that I use for ATP. By removing the 455KHz filter and replacing it with a 10 nF cap. you can get about 30-50 KHz band-with. You then tune the 455 KHz demod transformer for best reception. You can also add a resistor in parallel with the demod coil to widen the S-curve. The limit of the receiver is the crystal filter at 10.7 MHz. With a good ATP signal it will give a good result.

****
* STEVE KITTELSEN /\ *
* _ /\ /\ 1711 S.11th No.134 / \ *
* / /\ \/ BOZEMAN, MT 59715 / \ *
* I I I I SAK1@DELPHI.COM / \ *
* \ _\/_ / +Open Your Mind+ /________\ *
****

143. Phone Patch/Auto Patch Ckt's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 04:14:06 UTC
From: dws30@p1dbg02cd.amdahl.com
Message-ID: <cdSD02rC5aBD01@JUTS.ccc.amdahl.com>
Source record: 118837

The subject line says it for the most part. I'm interested in getting some schematics and such for a Phone Patch and such. If you can help I would like that very much. Please send mail to the address below rather then clutter up the group. Thanks a bunch. 73's

--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com

---

144. Amateur predicts LA quake (ELF)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 04:53:20 UTC
From: btbg1194@uxa.cso.uiuc.edu
Message-ID: <2hiec0$dve@vixen.cso.uiuc.edu>
Source record: 118833
Cross-posted to: uiuc.org.synton,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

A while back when I was doing some casual research on digitizing systems
and loop antennas for ELF field detection (60 Hz & under), I ran
across a guy in an Internet newsgroup who was an amateur studying
natural low frequency electromagnetic field patterns in relation to
earthquake prediction. I had a long file from him about the
techniques, but I cannot find it. I don't remember if this person
is a ham, but I do think that he was from the Kentucky/Tennessee area.

Here is another of his ilk, who might just become famous:

(Associate Press, Champaign-Urbana News-Gazette, January 18, 1994)

Amateur had sounded alarm over the weekend

SAN FRANCISCO (AP) -- An amateur who studies radio signals had
warned over the weekend that an earthquake capable of "devastating"
damage would hit California within three days.
Jack Coles, a former stereo salesman with no college degree,
operates the Early Warning EarthQuake Detection network out of his
home in San Jose, occasionally faxing his warnings to the media.
The fax he issued Saturday said he had received reports of "increased
radio signals, magnetic anomalies and many cases of electrical problems".
He warned that the results could mean a quake measuring more than 6
on the Richter scale.
The quake that hit before daybreak Monday in Southern California
measured 6.6.
"I had no idea the quake would roll the way it did," Coles said
Monday night. "I didn't think it would be this bad and last as long
as it did."

73 de kb8cne @ n9lnq.il, Brad
Champaign-Urbana, IL
--
Brad Banko; Univ of Illinois; b-banko@uiuc.edu
====== Ich habe kein Bock mehr zu schreiben. ======================
See one. Do one. Teach one. 73 de kb8cne @ n9lnq.il

145. iambic keyers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 12:32:58 UTC
From: esj@harvee.billerica.ma.us
Message-ID: <H.eg.ZtSMNCSiFKU@harvee.billerica.ma.us>
Source record: 118832

I am looking for a simple low power iambic keyer circuit that I can build for my nn1g qrp rig. any favorites?

Also, I am looking for plans for paddles that I can build as well. I seem to remember some plans for wood paddles in either qst or (more likely) 73 but I have flipped through my back issues without finding anything.

help?

--- eric (if anyone had told me I'd be looking forward to using cw, I would have told them they were crazy. homebrewing a rig changes all that. look for me in the 80m novice band in about 2 weeks. (still need to get an antenna up and the rig in a case))

--
HOME: esj@harvee.billerica.ma.us HAM ka1eec
WORK: esj@temerity.polaroid.com 617.386.4687
source of the public's fear of the unknown since 1956

146. IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 15:42:57 UTC
From: mac20@konichiwa.cc.columbia.edu
Message-ID: <2hjke1$7v7@apakabar.cc.columbia.edu>
Source record: 118835

I'm looking for a good public domain, shareware, program for laying
out artwork for photo-exposing boards. I want to be able to generate laser
printer output for transparencies, either positive or negative.
I've tried a few so far but
none have really done it for me. i want something that will last
me through a few years.

What's your favorite PCB layout program?
Mike Cecere
Applied Physics department
Columbia University

147. Ramsey 6m radion front end tuneing

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 15:48:07 UTC
From: "Eleen N. Kamas" <kamas+@CMU.EDU>
Message-ID: <ghDJMrW00jWRAOCL5L@andrew.cmu.edu>
Source record: 118834

Hello all:

I just finished my kit last night. So far no QSO's under my belt,
but that will be taken care of soon! 8-)

My question is on the two adjustiable coils on the front end of the
reciever. What are they for? Are they for adjusting the cut off
frequency of the High pass filter? If so how do you adjust them? I
scowered the doc and assembly manual but could not find anything. Also
how does one accurately adjust the quaderature coil? Just for good
sound doesn't sound good enough to me... (I have this insaine desire to
use meters for EVERYTING... after all nothing is adjusted till a 'scope
sees it right!)

Any how, this kit was lots (make that a long time) of fun to
assemble, and well worth it. No if I can just figure out an antenna...

N3QAT
Chuck Kamas
ee2g+Charles@andrew.cmu.edu

148. Old Radio Elec/Pop Elec Magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 17:28:01 UTC
From: jcarcia@arrl.org
Message-ID: <1994Jan19.172801.1729@arrl.org>
Source record: 118845

Does anyone have any old Radio Electronics or Popular Electronics
magazines from, say, late 1978 to early 1980?

I'm looking for a VLF Receiver that one of these magazines detailed
how to build. (I can't remember which one, though.)

The VLF receiver used a CA3028A I.C., and a few Radio Shack transformers
for coils.

I would like just a good copy of the complete article.

Please direct any responses to: jcarcia@arrl.org

Thanks!

73,

Joe, NJ1Q

--
Joseph Carcia, NJ1Q | "The surest sign that Intelligent
ARRL Outgoing QSL Service Mgr. | life exists in the Universe is
American Radio Relay League | that NONE of it has ever visited
225 Main St | the EARTH!" - Calvin & Hobbs

149. Controller prog for FRG-9600/965 up for grabs.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 17:48:43 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan20.014843.1@ntuvax.ntu.ac.sg>
Source record: 118836

Hi,
Anyone interested in a fancy controller program for the YAESU FRG-9600 or FRG-965, e-mail and ask for it. Does bacnground
scanning etc. etc. Also includes a very simple circuit for an enhanced CAT interface.

73 de 9VG Daniel

150. Re: 51' Tower For Sale w/ House

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 20:03:24 UTC
From: kurt@cs.tamu.edu
Message-ID: <2hk3mc$5j@news.tamu.edu>
Source record: 118843
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.packet,rec.radio.amateur.policy

```
[ Description of 51' tower and its accessories (a house) ]
> Asking $219,950

Wow! That's the most expensive 51' tower I've ever seen! Nice accessories,
though.... 8-}
kf
--
Kurt Freiberger, wb5bbw kurt@cs.tamu.edu 409/847-8607 fax:409/847-8578
Dept. of Computer Science, Texas A&M University DoD #264: BMW R80/7 pilot
"Even MY hypocrisy has its limits." - "Doc" Holliday, in Tombstone
*** Not an official document of Texas A&M University ***
```

151. Re: Global Alert For All: Jesus is Coming Soon

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 20:31:42 UTC
From: mack@helix.nih.gov
Message-ID: <1994Jan19.203142.9618@alw.nih.gov>
Source record: 118842

In article <CJu35q.JM9@news.direct.net> kg7bk@indirect.com (Cecil Moore) writes:
>Clarence L. Thomas IV (clarence@orion.cc.andrews.edu) wrote:
>
>(a bunch of stuff he can't prove that has absolutely no relevence to hams.)
>
>Funny, I've never heard God or Jesus on ham radio...what are their calls?

WHy don't you call Clarence's boss, the President of Andrew's college
and ask him. His number is (616)-471-3100. I left a message there this
morning
on his machine.

Joe Mack NA3T
mack@ncifcrf.gov

>If they're not hams or potential hams, then they don't belong here.
>These groups are about sharing knowledge and faith is not a tool of knowledge.
>
>73, Cecil, kg7bk@indirect.com
>

152. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 20:45:50 UTC
From: alanb@sr.hp.com
Message-ID: <CJw9oF.A96@srgenprp.sr.hp.com>
Source record: 118840

Michael A Cecere (mac20@konichiwa.cc.columbia.edu) wrote:
: I'm looking for a good public domain, shareware, program for laying
: out artwork for photo-exposing boards. I want to be able to generate laser
: printer output for transparencies, either positive or negative.
: I've tried a few so far but
: none have really done it for me. i want something that will last
: me through a few years.

: What's your favorite PCB layout program?

I use Circad by Holophase Inc. It runs on any IBM PC with some kind of
graphics display (EGA or above strongly recommended.) It is written
in machine language so even a slow PC-AT/286 gives acceptable performance.
The demo version is free, the Radio Amateur version (identical to the
$1000 commercial version) is $300, as I recall. The demo version works
fine, but does limit the maximum PCB size.

The program does both schematics and PC layouts, with netlist checking
between the two. Output formats include Gerber photoplotter,
HPGL (pen plotters), PCL (Laserjet printers), and a bunch of others.
I find the program very powerful and easy to use.

Holophase Inc.
6191 Orange Drive
Suite 6173-L
Davie, FL 33314
800-528-6516

AL N1AL

153. Re: Ten Tec kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 22:00:25 UTC
From: BRUNELLI_PC@delphi.com
Message-ID: <940119.61225.BRUNELLI_PC@delphi.com>
Source record: 118838

Michael Ross <bonesigh@mindvox.phantom.com> writes:

>I've seen Ten Tec announcing that they have a new kit catalog available.
>Has anyone received a copy of their catalog? Anything interesting?
>73 de Mike, W2VD

I spoke to the folks at ten tec about the kits last week when i

noyt be ready for a ew months. call and get on the list.

pete n1qdq

154. Re: iambic keyers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-19 22:04:08 UTC
From: BRUNELLI_PC@delphi.com
Message-ID: <940119.61448.BRUNELLI_PC@delphi.com>
Source record: 118839

Eric S Johansson <esj@harvee.billerica.ma.us> writes:

>--- eric (if anyone had told me I'd be looking forward to using cw, I
> would have told them they were crazy. homebrewing a rig
> changes all that. look for me in the 80m novice band in
> about 2 weeks. (still need to get an antenna up and the
> rig in a case))

eric, drop a line to my int address and we can set up a sked. i am loacated in central ct, and am just getting started on cw also. good luck with the rig

73's

pete n1qdq

155. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 06:56:21 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.759048981@bauv106>
Source record: 118852

alanb@sr.hp.com (Alan Bloom) writes:

>James H. Haynes (haynes@cats.ucsc.edu) wrote:

>: In article <claude.758268586@bauv106> claude@bauv.unibw-muenchen.de (Claude Frantz) writes:

>: TUs of both kinds have been built, or TUs where the limiter can be switched
>: off. As I recall the limiter on gives best results if you can keep the
>: desired signal stronger than the interference; and the limiter-off gives
>: better performance when the desired signal is weak, but usually at that point
>: copy is so crummy anyway that you might as well give up.

>That was my experience. Years ago, when I was active on RTTY, I used a
>commercial demodulator that had both modes. Despite the enthusiastic claims
>of much-improved performance in AM detection mode, I found the advantages
>to be minimal to non-existant on typical on-the-air signals.

According to my experience, the best way is to use an alternating sequence
of limiters and band-pass filters. The limiting quality (i.e. the threshold)
of each limiting stage is only on secondary significance. The important
fact is the alternating sequence. Of course, this is simpler to do on the
IF level.

According to my experience, the best way is to use a sequence
--
Claude F.

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

156. Re: Ten Tec kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 15:02:28 UTC
From: SUSEEA@MAINE.MAINE.EDU
Message-ID: <94020.100228SUSEEA@MAINE.MAINE.EDU>
Source record: 118844

Just got off the phone with Ten-Tec....the catalog is due out
in about a week according to the sales people. Supposed to
have some things like 2 meter handhelp amps, artificial
ground stuff, 6 meter stuff etc.
By the way the number to reach them at is 1-800-833-7373.
Just plain nice people there.

Alan
N1QWT

157. Oscillators using MMIC's Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 18:12:00 UTC
From: kirkland@bnr.ca
Message-ID: <1994Jan20.181200.876@bnr.ca>
Source record: 118846

I remember reading an article on building oscillators using MMIC's amplifiers e.g. one of mini-circuits MAR series amplifiers, however I can remember which magazine it was in. Has anyone else seen this article? If so could you tell me where to find it.

Thanks
Bill Kirkland

158. Re: Oscillators using MMIC's Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 19:27:45 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2hmlvh$fjq@hpscit.sc.hp.com>
Source record: 118847

In article <1994Jan20.181200.876@bnr.ca>,
Bill Kirkland <kirkland@bnr.ca> wrote:
>I remember reading an article on building oscillators using MMIC's
>amplifiers e.g. one of mini-circuits MAR series amplifiers, however
>I can remember which magazine it was in. Has anyone else seen this
>article? If so could you tell me where to find it.
>
>
>Thanks
>Bill Kirkland

There have been several papers at the Frequency Control Symposium on this in the last 5 years. There might have been an article in RF Design magazine about it also.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

159. Re: Old Radio Elec/Pop Elec Magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 19:37:15 UTC
From: jmhill@duck.WPI.EDU
Message-ID: <2hmmhb$qpb@bigboote.WPI.EDU>
Source record: 118851

Hi;
I can testify to the existence of the article that you mentioned.
I believe that the title of the article made reference to, "whistlers."
The author described the phenomenon, along with, "morning sounds."
The author presented a receiver circuit and an account of the signals
he had received. The author hadn't anticipated receiving Navy VLF signals,
but the Navy was very friendly and sent the author some information that
was included in the article.

Faily recently I saw a well written technical article on whistlers.
I'm not sure, might have been in QST. Apparently lightning strikes have
their emitted radio energy (I'm not clear here...) ducted somehow by the
Earth's ionoshere....

I did locate all the parts to build the receiver but apolagize, did
not have the opportunity to build it. I recall that the design was fairly
simple. Like you said, a couple of op-amp stages and a power transisitor,
transformer combination to power a good size speaker. I have two places where
I store magazines, so it may be a while before I can check both.

I recall that Heathkit used to sell a VLF converter. The idea was that
the converter would receive VLF, upconvert the signal to the HF band, and
then you could use your HF rig as the tuner. Maybe consider asking if anyone
could sell you one of these VLF converter units used?

If you have a chance, locate the latest IEEE antennas and propagation
magazine. Try a good library. The historian has a bit on old radio techniques.
Apparently VLF was, "the thing" in those days. The author identifies the
major current Navy transmitter stations still in use. In Japan a 38KW Poulsen
Arc Set transmitter is apparently in use.

A few months back, QST had an article on VLF stations, licensing and
such. Apparently the FCC does not require licensing for VLF transmitters,
but nevertheless has strict rules on the configurations of such transmitters.
The author was inviting readers to join a group he called, "lowfers." Heck,
try anything once?

Jonathan Hill
N1QOL
jmhill@ee.wpi.edu

160. QSK circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 20:24:36 UTC
From: Waltk@PICA.ARMY.MIL
Message-ID: <9401201524.aa03749@COR5.PICA.ARMY.MIL>
Source record: 118848

Hello. I have just read the Feb. issue of QST and found Measure's article on "The Perfect Amplifier" to be very informative. I am planning to implement his circuit for QSK and bias switching.

I'd like to hear from others who have successfully implemented homebrew QSK circuits in their RF amplifiers - whether they are retrofits of commercial units, or additions to a homebrew amp. Your experience and relections would be greatly appreciared. I'm most interested in how to set the timeing of the driver, amplifier and bias switching relays to prevent hot-switching.

Thanx for reading this and I'm looking forward to your response.

73 de Walt - K2WK

161. Re: QSK circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-20 20:59:52 UTC
From: rdewan@casbah.acns.nwu.edu
Message-ID: <2hmrc8$qu1@news.acns.nwu.edu>
Source record: 118849

In article <9401201524.aa03749@COR5.PICA.ARMY.MIL>,
<Waltk@PICA.ARMY.MIL> wrote:
>Hello. I have just read the Feb. issue of QST and found Measure's article
>on "The Perfect Amplifier" to be very informative. I am planning to implement
>his circuit for QSK and bias switching.
>
>I'd like to hear from others who have successfully implemented homebrew QSK
>circuits in their RF amplifiers - whether they are retrofits of commercial units,
>or additions to a homebrew amp. Your experience and relections would be
>greatly appreciared. I'm most interested in how to set the timeing of the
>driver, amplifier and bias switching relays to prevent hot-switching.
>
>Thanx for reading this and I'm looking forward to your response.
>
> 73 de Walt - K2WK

I implemented his TR circuit in a Henry K2000 amplifier. The amplifier used
a massive open framed dpdt relay that made the sound of a slamming door
everytime it was activated. Needless to say, it was slooow. I replaced
it with a Jennings vacuum relay (not the one he recommends but another one)
for output and a rf reed relay (obtained from Surplus Sales of Nebrasks)
for the input. I had to fool around with the circuit a bit:
- put in a voltage doubler on a 15v ac circuit to get about 42v dc
for the 26v relay (fed thru a current limiting resistor)
- re-wired the control circuits to work with the new tr relays
I tested it using a dual channel o'scope and it looked fine. Seemed
fine on the air too.

I am currently working on a medical amp with two 3-500Z. I plan to
follow Rich's circuits.

BTW, I highly recommend reading his earlier articles, getting in
touch with him and getting kits for mods from him. For a small
photo copying charge, he will send you lots more details about his mods.

Best of luck and cu on the bands,

Rajiv
aa9ch
r-dewan@nwu.edu

162. Re: QSK circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 02:32:08 UTC
From: alanb@sr.hp.com
Message-ID: <CJyKDL.1tG@srgenprp.sr.hp.com>
Source record: 118850

Waltk@PICA.ARMY.MIL (Waltk@PICA.ARMY.MIL) wrote:

: I'd like to hear from others who have successfully implemented homebrew QSK
: circuits in their RF amplifiers

I haven't done it on a KW amp, but have successfully done it on a 100 watt tube transmitter (Drake T4XB). The trick is to connect a SMALL capacitor to the top of the output tank circuit (on the output side of the tube plate coupling cap). The other end of the small cap is clamped to ground with a pair of diodes. The gate of a FET (RF MOSFET or JFET should work) is connected to the junction of diodes/capacitor. The FET operates as an amplifier to bring the signal level back up to feed to the receiver. I added a bipolar emitter-follower after the FET to get a lower impedance to drive the 50-ohm receiver input.

You can connect the diodes back-to-back to ground, but this might cause some IMD overload on receive, so I biased the center point up to half the FET supply voltage (which made a nice bias voltage for the FET gate anyway), and clamped the two diodes to ground and supply respectively.

The big tradeoff is this: The bigger the small capacitor, the more receive signal gets through and the better the receive sensitivity. But the bigger the cap, the higher the RF current through the diodes on transmit. I selected the cap to give about 1 Amp of RF key-down on 10 meters. (That's 1/2 amp through each diode.) The 1N4148 switching diodes I used seemed happy with this. Note that that half of that amp will be dumped through the top clamp diode into the positive FET supply. I used a shunt regulator rated at >0.5A to sink the current.

Bottom line: it works great. The QSK circuit gain is slightly greater than unity on receive, but it does seem to degrade noise figure slightly on 10 meters. If I need to hear a very weak signal on 10, I just let the T4XB's T/R relay drop out and operate in non-QSK mode.

I also had to make some other slight mod's to the transmitter to bias off the output tubes in the key up condition and to rewire the receiver input line that comes from the T/R relay. I have the schematic around somewhere -- if anyone sends me an SASE, I'll send a copy.

AL N1AL

163. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 04:42:37 UTC
From: dws30@p1dbg02cd.amdahl.com
Message-ID: <16fT02SH5bd501@JUTS.ccc.amdahl.com>
Source record: 118859

I think you and anyone else interested would like Protel Easytrax. I bought it when it was not ShareWare (Hay how was I to know two years later you could get it free). I've run a few boards with it and had great success. And you can throw a sheet of overhead projector film in your laser printer and save the trouble of having the gerber files plotted. (About $25 for a 8x10 film)
--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com
---

164. Re: Portable 2m Antenna for Mountaineering???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 14:47:21 UTC
From: zlau@arrl.org
Message-ID: <1994Jan21.144721.5694@arrl.org>
Source record: 118856
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

A simple dipole can be a surprisingly good portable antenna
if used intelligently. By adjusting the location and polarization,
you can often come close to the gain of a small beam. Since
a 2 meter dipole is small and balanced, it usually isn't too
difficult to hold it in the optimum position.

However, a beam makes more sense for setting up long distance
(200 to 500 mile) microwave contacts, where two or more antennas
have to be kept in alignment.

I've found that Cushcraft antennas can be folded into slender poles
if you loosen the elements, rotate them 90 degrees, and retighten
them. Unfortunately, you can lose hardware getting up the mountain.
Of course, many of these antennas can sacrifice an interior director
without losing any gain, so perhaps this isn't much of a worry.

My latest mountaintop antennas are built like the K1FO antennas with
retaining rings. The antennas will not fold up, but littering
the mountain with stainless steel hardware is less of a problem.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

165. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 20:43:07 UTC
From: alanb@sr.hp.com
Message-ID: <CJzyvw.Csv@srgenprp.sr.hp.com>
Source record: 118854

Claude Frantz (claude@bauv.unibw-muenchen.de) wrote:
: alanb@sr.hp.com (Alan Bloom) writes:

: According to my experience, the best way is to use an alternating sequence
: of limiters and band-pass filters. The limiting quality (i.e. the threshold)
: of each limiting stage is only on secondary significance. The important
: fact is the alternating sequence. Of course, this is simpler to do on the
: IF level.

I read a paper years ago that advocated that technique. It was in
reference to voice FM, but I presume it would apply to FSK as well.

AL N1AL

166. Re: Optimum FSK shift

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 21:29:07 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2hphf3$i11@hpscit.sc.hp.com>
Source record: 118853

In article <CJzyvw.Csv@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>Claude Frantz (claude@bauv.unibw-muenchen.de) wrote:
>: alanb@sr.hp.com (Alan Bloom) writes:
>
>: According to my experience, the best way is to use an alternating sequence
>: of limiters and band-pass filters. The limiting quality (i.e. the threshold)
>: of each limiting stage is only on secondary significance. The important
>: fact is the alternating sequence. Of course, this is simpler to do on the
>: IF level.
>
>I read a paper years ago that advocated that technique. It was in
>reference to voice FM, but I presume it would apply to FSK as well.
>
>AL N1AL
>

There was another Baghdady paper circa 1958 that said you should have alternating limiters and bandpass filters in order to optimize capture ratio for analog FM. The theory was that the limiter had the effect of converting a lot of the beat note interference to frequencies beyond the IF passband. These were removed with a subsequent filter, but the filter reintroduced AM to the signal, which is why another limiter was needed, etc.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

167. Digital Dial

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-21 23:37:40 UTC
From: epacyna@auratek.COM
Message-ID: <1213@auratek.COM>
Source record: 118855
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew

From article entitled "Universal Digital Frequency Readout", QST January 1980.

Built and tested (2) PCB set. The main logic board is 5"W x 3"D and the dis-
board is 4 5/8" W x 2 1/8" H. Not included is 5V power supply and enclose.

Features (4) .3"H 7 segment LED's. For example, 14.285500 Mhz will be displayed
as 285.5. The counter has selectable presets (via dip switches) on the decimal
counters and it can count in either the up or down direction. These features
are allow the unit to be used on any receiver / transmitter mixing scheme
(i.e. The VFO frequency is counted and the frequency of the IF, offsets etc.
are added or substracted).

Ideal for updateing your Drake, Tentec etc.or adding to your homebrew project.

Price is $45.00 + shipping.

Reply to ed@auratek.com

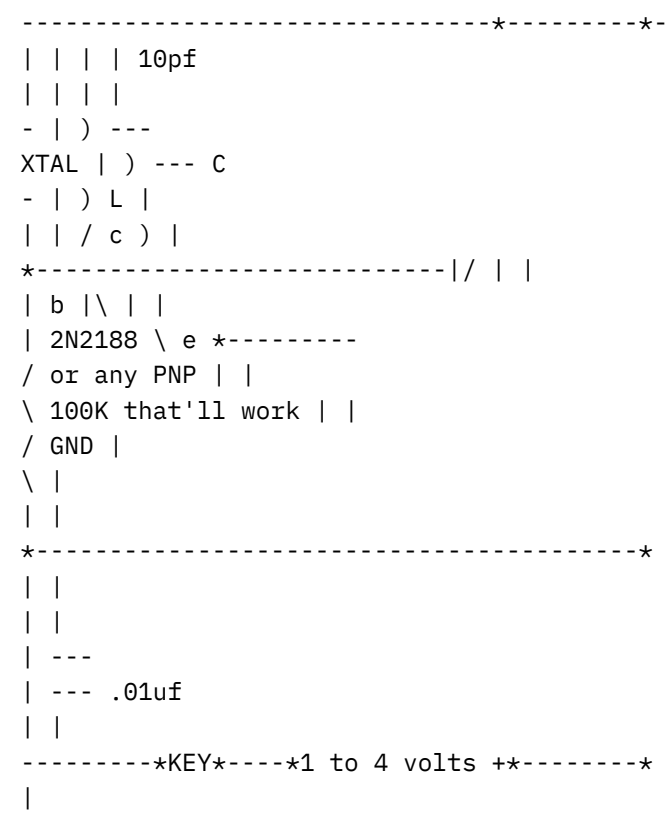
73

Ed W1AAZ

168. PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-22 05:47:24 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CK0o31.54n@news.Hawaii.Edu>
Source record: 118858

Gang,
If there was a contest to come up with a xmtr containing as few
parts as possible, this would be the winner: 10 parts if you include
the key, battery, and antenna!
In the CODE/NO-CODE debate on r.r.a.policy some pro-coders will
mention the simplicity of CW xmtrs as opposed to those of other modes;
this circuit really drives that point home (that's why I'm posting this
on .policy)
On r.r.a.misc we've heard talk about how costly ham gear is today - all
this rig will cost you is the effort to find an old color TV chassis -
that's the parts source for all my QRP transmitters (and this is why I'm
also posting this on .misc).
Normally I post these xmtrs only on r.r.a.homebrew and on the QRP
mailgroup; so if you've missed the first dozen xmtr circuits email me
and I'll send them off to you.
I built this for 80M only because I've got so many 3579 kHz crystals
from old TV sets, but this can be used on any HF band - just choose
L and C to resonant at the crystal frequency.
For peace of mind you might want to add a bandpass filter to the
output.



|
GND

Again, choose L&C to resonant at the desired frequency; one of the two should be adjustable. I got both from the chromatic board of a TV - both were sitting next to the 3579 kc xtal; easy, huh? I didn't use a 2N2188 transistor; rather, I used a x-sistor right off the video board (of the TV).
So, don't you dare buy one component for this - just dig through your junk box (or your neighbor's trash for an old TV). With a good antenna (those are the magic words in QRP work) this little peanut-whistle will provide hours of pleasurable QSO's.
Oh, 3579 kc has become a national QRP frequency due to the easy availability of these crystals.

.... .- ...- . ..-. ..- -.

72,
Jeff NH6IL

169. VLF Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-22 06:15:01 UTC
From: elassley@nde.unl.edu
Message-ID: <2hqg95$cc5@crcnis1.unl.edu>
Source record: 118857

Hello fellow netters. I have a question. In a pre 1990 magazine which I think was an Electronics Now catalog, there was an article written about a Frequency that is open as a freeband. Included in the article was a parts list and schematic for making your own xmitter and receiver so that you could contact people on CW or Voice with a range of about 300 miles. It was QRP for sure but does anyone know what issue that was or if I even saw it in that particular magazine? Thanks for any help. You can reply here or at kb0dmu@k0kkv. Thanks

--
| // // ONLY AMIGA *-=>SS<=-* Imperial Realm: 402-223-2089 |
| _ // // MAKES IT ********** Where you going now? When you |
| \\//\\// POSSIBLE!! *-KB0DMU-* get to the top of the hill, |
| \/ \/ ********** gonna be there yes I will. - DY |

170. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 04:34:14 UTC
From: arog@BIX.com
Message-ID: <arog.759386054@BIX.com>
Source record: 118862

dws30@p1dbg02cd.amdahl.com (David Sharpe) writes:

>I think you and anyone else interested would like Protel Easytrax. I
>bought it when it was not ShareWare (Hay how was I to know two years
>later you could get it free). I've run a few boards with it and had
>great success. And you can throw a sheet of overhead projector film in
>your laser printer and save the trouble of having the gerber files
>plotted. (About $25 for a 8x10 film)
>--

>---
> Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com
>---

Dave... do you know of any archive sites that have
this file?

171. An easy question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 07:00:28 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2hvrmc$11l@olivea.ATC.Olivetti.Com>
Source record: 118860

Sorry for the innocent question BUT :

could anybody explain me what a "hot carrier diode" is and what is
the difference using it and another kind of diode ?
In a few word when I must use it ?

Thanks to everybody

Roberto

172. Power Supply Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 15:33:50 UTC
From: tavernin@sun1.interlan.com
Message-ID: <CK54KF.CGJ@rd1.InterLan.COM>
Source record: 118861

I just received to massive transformers for free and was wondering
about their suitability for use in a 13.8V power supply.

They have 48V center tapped secondaries rated at 12 Amps ...

My question is -

Does a typical center-tapped full wave rectifier limit me to 24V at 12 Amps?
Also, is there a way of getting 24V at 24 Amps out of these things!?

Thanks,

Victor Tavernini
Racal-Datacom, Inc.

tavernin@sun1.interlan.com

173. digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 18:59:50 UTC
From: BRUNELLI_PC@delphi.com
Message-ID: <940124.50390.BRUNELLI_PC@delphi.com>
Source record: 118863

I use a ten-tec triton and have a fluke freq counter. I am trying to find a
an easy way to get a stable spot of my transmitting freq from the counter
without tapping the transmission loine. should i build a line sampler,
tap the if in some way, ir just forget it!!!???

thanks

pete n1qdq

174. Re: An easy question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 20:54:45 UTC
From: royle@tekig6.PEN.TEK.COM
Message-ID: <13387@tekig7.PEN.TEK.COM>
Source record: 118865

robertov@flash.ATC.Olivetti.Com (Roberto Valfredini):

>could anybody explain me what a "hot carrier diode" is and what is
>the difference using it and another kind of diode ?
>In a few word when I must use it ?

Hot-carrier, or schottky, diodes use a metal-semiconductor junction rather than a junction made of P- and N-type semiconductors. One of their distinguishing features is a lower forward voltage drop than silicon PN junction diodes. Depending on the metal used, the forward drop will typically be from around 0.3 to 0.5 volts at low current, vs 0.6-0.7 for PN junction diodes. A second important characteristic is lack of charge storage. When a PN junction diode is forward-biased, charge is stored in the junction area. The charge remains after the forward bias is removed. This causes the diode to stay on for a period of time after bias is removed. The lack of storage is important in vhf/uhf/microwave mixer applications, and in some switching power supply applications. The lower forward drop enhances detector sensitivity and permits making mixers with lower LO power being required than if PN junction diodes were used. Lower forward drop also leads to better efficiency in low-voltage power supplies.

On the down side, schottkys are more expensive and somewhat more fragile than PN junction diodes. They also have much greater leakage when reverse-biased, a property which sometimes negates the advantage of lower forward drop in power supply applications. The forward characteristic isn't as sharp as for PN junction diodes, so at high currents the forward drop can equal or exceed that of a junction diode.

In a few words, use small-signal schottky diodes for vhf/uhf/microwave detector and mixer applications.

You can find more information about Hot-carrier diodes in the ARRL Handbook. It's on p. 4-6 in the 1992 edition.

73,
Roy Lewallen
W7EL

175. Re: An easy question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 21:24:59 UTC
From: alanb@sr.hp.com
Message-ID: <CK5Ktn.3En@srgenprp.sr.hp.com>
Source record: 118864

Roberto Valfredini (robertov@flash.ATC.Olivetti.Com) wrote:

: could anybody explain me what a "hot carrier diode" is and what is
: the difference using it and another kind of diode ?
: In a few word when I must use it ?

I believe it's just another name for a Schottky diode.

In a normal silicon diode, the diode junction is formed by the contact between two oppositely-doped (N and P) pieces of silicon. In a Schottky diode, the junction is formed between one piece of silicon and a metal contact.

Since the contact junction can be made very small, the junction capacitance is also small. The main advantage of Schottkys is that they work at very high (microwave) frequencies. They also have lower forward-conduction voltage than junction diodes, so they are sometimes used as power rectifiers for that reason.

AL N1AL

176. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 21:38:15 UTC
From: niemi@astroatc.uucp
Message-ID: <1994Jan24.213815.23194@astroatc.uucp>
Source record: 118719

In article <16fT02SH5bd501@JUTS.ccc.amdahl.com> dws30@p1dbg02cd.amdahl.com (David Sharpe) writes:
>I think you and anyone else interested would like Protel Easytrax. I
>bought it when it was not ShareWare (Hay how was I to know two years
>later you could get it free). I've run a few boards with it and had
>great success. And you can throw a sheet of overhead projector film in
>your laser printer and save the trouble of having the gerber files
>plotted. (About $25 for a 8x10 film)
>--

You can buy a package of 50 ea. 8.5" X 11" clear overhead transparency sheets from Sam's Wholesale Club for about $7.50.

Bob Niemi, W9FNJ, Astronautics, Madison, WI ..uwvax!astroatc!niemi

177. want to build reciever for 108-137Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 21:46:58 UTC
From: berthec@osiris.cso.uiuc.edu
Message-ID: <2i1fki$cmb@vixen.cso.uiuc.edu>
Source record: 118866
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

As the subject line says, I want a tunable receiver that will pick up Air Bands (108-137 Mhz). I don't need anything fancy, but I don't have much to go on. What would this entail, it can be rough but needs to be cheaper than buying a $100 scanner with the same capabilities (except lot's fancier). I had (as a kid) a radio shack kit that built an AM receiver, is that pretty close to what I have to do to pick up these higher freq's? I figure some of you guy's would know. If you know of a book that would tell me what I need, that would work fine. thanks in advance....

Chad Berthelson
k
--
Chad R. Berthelson Navy Public Works Center
Environmental Engineer 310 John Tower Rd.
berthec@osiris.cso.uiuc.edu Naval Air Station
(904) 452-4728 (work) Pensacola, FL 32508-5303

178. EIMAC design book?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-24 22:37:21 UTC
From: (unknown)
Message-ID: <1994Jan24.223721.12926@zds-oem.zds.com>
Source record: 118867

I seem to remember a posting here describing a booklet that was
available from EIMAC on designing with their tubes. Apparently
it was free for the asking.

Anybody have this information? Is the booklet worth the price?
Could you pass on the particulars to me.

Thanks in advance.

Earl Morse
KZ8E
e.morse@zds.com

179. Re: digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 03:00:56 UTC
From: alanb@sr.hp.com
Message-ID: <CK60DL.EGq@srgenprp.sr.hp.com>
Source record: 118718

BRUNELLI_PC@delphi.com (BRUNELLI_PC@delphi.com) wrote:
:
: I use a ten-tec triton and have a fluke freq counter. I am trying to find a
: an easy way to get a stable spot of my transmitting freq from the counter
: without tapping the transmission loine. should i build a line sampler,
: tap the if in some way, ir just forget it!!!???

If the IF is an integer MHz (for example, 9 MHz), then you could tap into
the output of the local oscillator, and ignore the MHz digits on the
counter. That way, the counter would work on receive, too.

AL N1AL

180. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 05:58:14 UTC
From: myers@sunspot.West.Sun.COM
Message-ID: <2i2cdmINN5k6@abyss.West.Sun.COM>
Source record: 118755

In article <CK0o0G.53D@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeff Herman) writes:
>Gang,
> If there was a contest to come up with a xmtr containing as few
>parts as possible, this would be the winner: 10 parts if you include
>the key, battery, and antenna!

I can beat this.

> I built this for 80M only because I've got so many 3579 kHz crystals
>from old TV sets, but this can be used on any HF band - just choose
>L and C to resonant at the crystal frequency.

Try using a 4049 or 74C04; use one inverter as a crystal osc (two caps + crystal) and the other five in parallel as a buffer. Use a small cap to couple the antenna, maybe 100pF. It'll run off 3-15V. Lessee.. xtal+74C04+caps+battery+key+antenna = 8 parts.

The 74C04 was invented in something like 1973.

> For peace of mind you might want to add a bandpass filter to the
>output.

or maybe a lowpass filter; that adds at least three more components. The 74C04 approach would really benefit from an LPF, too.

Oh, is this a CW issue? :-)

--
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

181. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 07:08:42 UTC
From: dws30@p1dbg02cd.amdahl.com
Message-ID: <654f02la5b3Z01@JUTS.ccc.amdahl.com>
Source record: 118726

I have herd that Easytrax may be FTP'd but don't know where. There was some talk on sci.electronics. I think I saw it on JDR Microdevices BBS as well. Sorry I can't be of more help. The program is worth the effort in getting though.
--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com
---

182. Re: An easy question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 10:35:54 UTC
From: c2k@ham.slc.mentorg.com
Message-ID: <C2K.94Jan25103554@ham.slc.mentorg.com>
Source record: 118734

In article <2hvrmc$11l@olivea.ATC.Olivetti.Com> robertov@flash.ATC.Olivetti.Com (Roberto Valfredini) writes:

Path: hpcan240.mentorg.com!news.mentorg.com!psinntp!psinntp!uunet!olivea!flash!robertov
From: robertov@flash.ATC.Olivetti.Com (Roberto Valfredini)
Newsgroups: rec.radio.amateur.homebrew
Subject: An easy question
Date: 24 Jan 1994 07:00:28 GMT
Organization: Olivetti ATC; Cupertino, CA USA
Lines: 12
Distribution: usa
Message-ID: <2hvrmc$11l@olivea.ATC.Olivetti.Com>
NNTP-Posting-Host: flash.atc.olivetti.com

Sorry for the innocent question BUT :

could anybody explain me what a "hot carrier diode" is and what is
the difference using it and another kind of diode ?
In a few word when I must use it ?

Thanks to everybody

Roberto

Howdy,
I believe that a hot-carrier diode is the same as a schottky diode. These
diodes are doped such that they have a slightly lower Von, and do not
saturate, so that they will transition to off more quickly when Vfb goes
below the threshold.

Cheers,
Carl

--

My opinions are mine, (all mine), and do not necessarily reflect
those of my employer.

Carl Ketcham carl_ketcham@mentorg.com WA7ZBV
Mentor Graphics, Suite 300, 5295 South 300 West, Murray, Utah 84107
---

183. Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 11:12:02 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan25.191202.1@ntuvax.ntu.ac.sg>
Source record: 118720

Hi,

Can anyone here give me some advice on building an antenna pre-amp
for working 4 - 24 mHz? Should I go broadband or switched bands? What about
pre-filtering?

What are the advantages of designing one around bi-polar or mosfet?
Can anyone contribute some tried and tested circuits for me to construct?

Tks.

73 de 9VG Daniel

184. Re: want to build reciever for 108-137Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 13:34:58 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan25.213458.1@ntuvax.ntu.ac.sg>
Source record: 118721
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

In article <2i1fki$cmb@vixen.cso.uiuc.edu>, berthec@osiris.cso.uiuc.edu (Chad Berthelson) writes:
> As the subject line says, I want a tunable receiver that will pick
> up Air Bands (108-137 Mhz). I don't need anything fancy, but I
> don't have much to go on. What would this entail, it can be rough
> but needs to be cheaper than buying a $100 scanner with the same
> capabilities (except lot's fancier). I had (as a kid) a radio
> shack kit that built an AM receiver, is that pretty close to what
> I have to do to pick up these higher freq's? I figure some of you
> guy's would know. If you know of a book that would tell me what
> I need, that would work fine. thanks in advance....

Depending on your taste, here's a pretty simple solution. Get yourself one of those cheap made in the Far East FM broadcast radios. Now when you open these sets you will normally see one or two small coils of enamel coated wire, especially near the tuning capacitor. As you move your finger near one of these coils, you will find that the radio detunes. That coil is the mixer oscillator coil. What you need to do now is to gently pry the windings apart so that the spacing is greater now. Step two is to indentify the trimmers behind the big tuning capacitor. Usually such small radios are AM/FM. Behind the tuning capacitor you usually find 4 trimmers. 2 are related to AM and 1 is for the FM coarse tuning and another for the telescopic antenna matching. I leave it to you to experiment. The coarse tuning will have the effect of changing the tuning range, you should turn this so that both the plates are visible to you. The antenna trimmer is for you to adjust for best reception. What you can do is tune to any FM station, see which trimmer detunes it, that is probably the coarse tuning. Finally, look for a light blue IF transformer can. This is sometimes white but it is the discriminator transformer. Turn this slowly until the white noise (the hissing) becomes loudest. This is necessary so that the AM reception is clearer since most FM also has some AM ability. Now tune to some station in about 124 mHz (you go figure that out yourself). When the transmission comes on. Tune the antenna for best reception. There is ANOTHER coil on board which is normally close to a bunch of capacitor and one transistor. This is the RF amplifier section. You can also stretch the coil a little to get better gain at Air-band.

There you go. A cheap ($5 or so) but working Air-band monitor.
Of course you don't get digital display or memory scanning .... but what do you expect :)

Have fun. 73 de 9VG Daniel

>
>
> Chad Berthelson
> k
> --
> Chad R. Berthelson Navy Public Works Center
> Environmental Engineer 310 John Tower Rd.
> berthec@osiris.cso.uiuc.edu Naval Air Station
> (904) 452-4728 (work) Pensacola, FL 32508-5303

185. Re: Power Supply Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 14:13:06 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan25.141306.651@ke4zv.atl.ga.us>
Source record: 118724

In article <CK54KF.CGJ@rd1.InterLan.COM> tavernin@sun1.interlan.com (Victor Tavernini) writes:
>I just received to massive transformers for free and was wondering
>about their suitability for use in a 13.8V power supply.
>
>They have 48V center tapped secondaries rated at 12 Amps ...
>
>My question is -
>
>Does a typical center-tapped full wave rectifier limit me to 24V at 12 Amps?
>Also, is there a way of getting 24V at 24 Amps out of these things!?

I've faced this problem many times over the years. It seems that 24 and 48(CT) volt transformers are a lot more common than the 16 or 32(CT) volt transformers you want for a pass regulated 13.8 volt supply. The way I solve it is with a switching pre-regulator working on the primary side of the transformer. Chopping at 60 Hz isn't terribly efficient, but if you do a missing pulse design, switching at zero crossings and eliminating whole quarter cycles, you can get a good enough voltage at the filter capacitor to drive a normal series pass regulator without having excessive drop across it. You do need to maintain some load on the supply at all times or it becomes erratic. A heavy bleeder shunt can handle this. If you want better efficiency, you can use a shunt pre-regulator circuit before the final pass regulator.

To get 24 amps, just parallel two of the transformers (watch winding phasing).

Of course there is another alternative. Open up the transformer and remove enough turns on the secondary winding to get the voltage down to the desired value. That's easier said than done in many cases, and silicon is cheap, iron is expensive, so using the pre-regulator approach is a good way to deal with the problem.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

186. mods for Sony ICF-2010 (2001D)?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 14:58:11 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan25.225811.1@ntuvax.ntu.ac.sg>
Source record: 118723
Cross-posted to: rec.radio.amateur.equipment,rec.radio.shortwave,rec.radio.amateur.homebrew

Hi,

Does anyone have any mods for the Sony ICF-2010 (or 2001D)?

I am also interested in adding a narrower IF filter to the
radio for SSB modes, any suggestions?

73 de 9VG Daniel

187. FOR SALE:Z-100 computer - "Good packet radio terminal"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 15:00:55 UTC
From: tmetzger@bbn.com
Message-ID: <mkad17INNksi@news.bbn.com>
Source record: 118722
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

FOR SALE:

> Zenith Z-100 Business computer.
> Older model
> Monitor,keyboard, two 5 1/4" drives, all one unit
> Z-Dos operating system.
> Some Compilers, WP software, Communications software.

> Best Offer.

Was recommended vvvvvvvvvvvvvvvvv

You might post to one of the ham radio newsgroups, and state that it
would be a good terminal for a packet radio station.

Tim Metzger
tmetzger@ccs1.bbn.com
(617)-873-2551

188. Re: digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 16:14:14 UTC
From: epacyna@auratek.COM
Message-ID: <1214@auratek.COM>
Source record: 118727

Pete

While your transmitting, your SSB or CW modulation will cause the frequency counter display to bounce around. It will only be readable on steady carrier. This method (sample output) also does not allow you to read your receive frequency.

A better method is to connect a counter to your VFO. Now you will also be able to constantly read receive and transmit frequency. Your fluke counter is not very appropriate however.

Each radio has a band plan (i.e. the relationships between the mixing process and resultant VFO, BFO, IF frequencies). Unless your radio has a 0 IF frequency, as in the case of direct conversion, the counter used will need to take into account whether it needs to count up or down, and be able to count from a pre-determined off-set determined from your radio's band plan. However, there are commerically built dials taht do this, or you can build your own (refernce Jan 1980 QST for construction article). The counter featured here can count up or down in frequency and has pre-settable decade counters.

The measurement principle is simple: the frequency of the VFO is counted and the frequency of the IF is added or subtracted from the VFO count (depending on the equipment frequency mixing scheme).

There is also a way to use your standard counter. This would envolve building a mixer which would installed between your VFO and counter. The mixing scheme could be selected to off-set the IF frequency etc..

These are the ways that you can read your equipment frequency, however it probably was not the answer you were hopeing for.

73

Ed W1AAZ

189. Re: digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 16:28:03 UTC
From: dtiller@cscsun.rmc.edu
Message-ID: <CK71qr.2v8@cscsun.rmc.edu>
Source record: 118725

BRUNELLI_PC@delphi.com wrote:
:
: I use a ten-tec triton and have a fluke freq counter. I am trying to find a
: an easy way to get a stable spot of my transmitting freq from the counter
: without tapping the transmission loine. should i build a line sampler,
: tap the if in some way, ir just forget it!!!???
:
: thanks
:
: pete n1qdq

Most likely you could wrap a few turns of wire around the feedline and
use that as a little antenna for the freq counter. Mine's sensitive
enough to read the freq. Does the triton have an low level RF output?
My FT-102 has a +- 1mW output that'll do just dandy.
--
David Tiller | Network Administrator | Voice: (804) 752-7373 |
dtiller@rmc.edu | Randolph-Macon College| Fax: (804) 752-7231 |
n2kau@wa4ong.va.usa.na | P.O. Box 5005 | This space for rent. |
ICBM: 37 45N 77 45W | Ashland, Va 23005 | |

190. XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 18:21:42 UTC
From: patrick_tatro@stortek.com
Message-ID: <patrick_tatro.6.7C558180@stortek.com>
Source record: 118733

Im looking for a vendor willing to supply crystals in the 1 or 2 quantity basis. Most vendors have minimum quantities that far exceed my needs. I am also not sure if I can locate crystals at 16.660Mhz and 16.600Mhz. Im trying to convert an FM pocket tranciever into a cordless phone unit. Any help will be greatly appreciated.

73's
Pat Tatro N0WCG

191. Re: Power Supply Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-25 20:41:49 UTC
From: alanb@sr.hp.com
Message-ID: <CK7DHq.2A9@srgenprp.sr.hp.com>
Source record: 118728

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: I've faced this problem many times over the years. It seems that 24
: and 48(CT) volt transformers are a lot more common than the 16 or 32(CT)
: volt transformers you want for a pass regulated 13.8 volt supply. The
: way I solve it is with a switching pre-regulator working on the primary
: side of the transformer. ...

: Of course there is another alternative. Open up the transformer and
: remove enough turns on the secondary winding to get the voltage down
: to the desired value.

Another alternative is to insert a low-voltage winding in series with
the primary to reduce the effective primary voltage. If there are two
24-volt windings on the same transformer, for example, just wire one
in series with the primary to reduce the primary voltage by about
20 volts. That will give you 20 volts on the other "24V" winding.

If you don't have a second winding, you can use a second transformer.
It doesn't need to be high-power since its secondary only needs to pass
the primary current of the main transformer. (Primary current =
slightly more than secondary current times [Vsecondary / Vprimary].)
You'll have to experiment to get the winding polarity correct, since
phasing is rarely marked.

AL N1AL

192. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 00:18:52 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan26.001852.3038@ke4zv.atl.ga.us>
Source record: 118731

In article <1994Jan25.191202.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
> Can anyone here give me some advice on building an antenna pre-amp
>for working 4 - 24 mHz? Should I go broadband or switched bands? What about
>pre-filtering?

Normally, a preamp is unnecessary for the HF spectrum. The usual problem
is inadequate rejection of strong signals. However, if you've got an old
deaf receiver, like say a S-28, a preamp may help. You definitely want to
use a selective amplifier with good sharp tuned circuits. A triple ganged
circuit would be a good idea. Otherwise your preamp will operate in overload
most of the time.

> What are the advantages of designing one around bi-polar or mosfet?
>Can anyone contribute some tried and tested circuits for me to construct?

FETs would be the more popular choice. You can tap up on the selective
circuits for lighter loading, hence higher Q, with less problems with a
FET. The old MPF102 would work for this type of circuit, but it can
be driven rather easily into overload. A power VMOS FET like the VMP-4
may be a better choice. Run about 100 ma of standing current.

In looking through my collection of ARRL Handbooks, I don't find a
HF preamp until I go back to the 1962 edition. They have one using
a 6AK5 pentode. This should give you an idea of the apparent lack
of need for such circuits with more modern equipment.

If the problem is that you are using a small voltage probe antenna,
a FET configured as an emitter follower mounted directly on the
antenna may be used to transform the signal impedance down to
something more to the liking of the receiver and coax. Again run
enough standing current to avoid overload problems.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

193. Re: digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 01:17:03 UTC
From: jkaidor@synoptics.com
Message-ID: <CK7q8H.Foq@synoptics.com>
Source record: 118729

In article 1214@auratek.COM, epacyna@auratek.COM (Edward Pacyna) writes:
>
>The measurement principle is simple: the frequency of the VFO is counted and
>the frequency of the IF is added or subtracted from the VFO count

**** Here's another way. You can use pre-settable counters, and instead of presetting them to zero, you preset them to the two's complement of the IF frequency. That way, the count goes up from (negative-of-the-if-freq) through zero up to the actual frequency of interest. This assumes high-side injection of course.

If you have a unit with different schemes for transmit and receive, then you just arrange to preset the counter to one value for xmit, another for receive. The scheme could even be expanded with diodes for bandswitching.

- Jerry Kaidor, KF6VB

194. Re: digital readout using freq counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 03:47:44 UTC
From: jkaidor@synoptics.com
Message-ID: <CK7x7K.GDw@synoptics.com>
Source record: 118730

In article Foq@synoptics.com, jkaidor@synoptics.com (Jerome Kaidor) writes:
>In article 1214@auratek.COM, epacyna@auratek.COM (Edward Pacyna) writes:
>>
>>The measurement principle is simple: the frequency of the VFO is counted and
>>the frequency of the IF is added or subtracted from the VFO count
>
>**** Here's another way. You can use pre-settable counters, and instead of
>presetting them to zero, you preset them to the two's complement

**** Oops, did I say 2's complement? I meant nines-complement, of course,
since one builds such counts in BCD form.

- Jerry Kf6vb

195. ICF-2010: adding filter, mods? Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 10:29:39 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan26.182939.1@ntuvax.ntu.ac.sg>
Source record: 118732
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi,

Can anyone tell me how to change the narrow and wide IF filter
inside the ICF-2010? What kinds of filter can I use? Can I use filters for
say the ICOM (FL-series) or Kenwood. 1) Will these work, 2) Will these fit?
I heard of the Kiwa filters for the 2010 too.

In general what kind of improvement can I expect out of using such
filters?

Can someone direct me to any sites where I can find out what kinds
of mods are available for the Sony ICF-2010/2001D? Tks.

73 de 9VG Daniel

196. Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 14:55:10 UTC
From: pea@wri.com
Message-ID: <CK8s3y.574@wri.com>
Source record: 118735

I'm getting ready to put a dipole up and use ladderline to feed it. I'm going to need an antenna tuner so I can tune this wire across 160-10m.

I thought building a tuner would be a nice winter project. Do any of you have a favorite tuner project you would like to point me to?? My rig is an ICOM IC-740, 100 watts out.

Thanks for the help!

Bruce

197. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 15:50:46 UTC
From: jms@col.hp.com
Message-ID: <2i63gm$pfd@hp-col.col.hp.com>
Source record: 118739

Patrick Tatro (patrick_tatro@stortek.com) wrote:
: Im looking for a vendor willing to supply crystals in the 1 or 2 quantity
: basis. Most vendors have minimum quantities that far exceed my needs. I am
: also not sure if I can locate crystals at 16.660Mhz and 16.600Mhz. Im trying
: to convert an FM pocket tranciever into a cordless phone unit. Any help will
: be greatly appreciated.

I order my crystals from either International Crystal Mfg. (ICM),
1-800-426-9825, or Jan Crystals, 1-800-526-9825 (just noticed the
similarity between those numbers, but I've talked to both outfits
recently on their 800 numbers). They will make crystals for any
frequency, holder style, etc that you need. They keep crystal data
for a lot of equipment, so you can sometimes just specify the unit
you need the crystal for. Other times, like the 200 kHz I needed
for an old R-390A receiver, you must specify the type of circuit, etc.
I once copied part of a schematic diagram and sent it in and let
their people determine the crystal load capacitance for me. They
both seem to be very accommodating people.
Obviously, I'm assuming you're located in the U.S.--not sure by your
posting.

Mike K0TER

198. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 16:16:56 UTC
From: jms@col.hp.com
Message-ID: <2i651o$pfd@hp-col.col.hp.com>
Source record: 118736

Bruce Pea (pea@wri.com) wrote:
: I'm getting ready to put a dipole up and use ladderline to
: feed it. I'm going to need an antenna tuner so I can tune
: this wire across 160-10m.

: I thought building a tuner would be a nice winter project.
: Do any of you have a favorite tuner project you would like
: to point me to?? My rig is an ICOM IC-740, 100 watts out.

: Thanks for the help!

There are a lot of antenna coupler designs, and some folks have favorites that they defend quite strongly, however, I've had good luck with the 'Ultimate Transmatch' design that can be found in older ARRL Amateur Radio Handbooks. Another design that is supposed to be good is the 'Series Parallel Capacitance (SPC)' that is shown in newer handbooks. I tried it and couldn't get it to do what I wanted, so went back to the 'Ultimate'. I haven't given up on the SPC, though, and have plans to try it again.

Mike, K0TER

199. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 16:41:38 UTC
From: ignacy@ux2.cso.uiuc.edu
Message-ID: <2i66g2$lo5@vixen.cso.uiuc.edu>
Source record: 118737

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>In article <1994Jan25.191202.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
>> Can anyone here give me some advice on building an antenna pre-amp
>>for working 4 - 24 mHz? Should I go broadband or switched bands? What about
>>pre-filtering?

>Normally, a preamp is unnecessary for the HF spectrum. The usual problem
>is inadequate rejection of strong signals. However, if you've got an old
>deaf receiver, like say a S-28, a preamp may help. You definitely want to
>use a selective amplifier with good sharp tuned circuits. A triple ganged
>circuit would be a good idea. Otherwise your preamp will operate in overload
>most of the time.

A preamp may be needed for upper bands if bands are quiet and antennas
not spectacular. A single tuned circut would cut out a mirror frequency
pretty well. Once I build a one-transistor preamplifier with one tuned
circuit, and it made a large difference on my SWAN 500.

>> What are the advantages of designing one around bi-polar or mosfet?
>>Can anyone contribute some tried and tested circuits for me to construct?

>FETs would be the more popular choice. You can tap up on the selective
>circuits for lighter loading, hence higher Q, with less problems with a
>FET. The old MPF102 would work for this type of circuit, but it can
>be driven rather easily into overload. A power VMOS FET like the VMP-4
>may be a better choice. Run about 100 ma of standing current.

MOSFETs and FETS may have too low gain to drive the coax. Large-signal
properties of a RF amplifier are not terribly important, especially
with the tuned front. It is usually the mixer that is more susceptible to
overloading.
Once I used a linearized bipolar transistor in the traditional
configuration, linearized with a 50 Ohm (I am not sure of the exact value)
resistor in the emitter.The coax was connected to the collector, which was
fed by a 100-200 Ohm resistor. The current was about 20 mA.

>In looking through my collection of ARRL Handbooks, I don't find a
>HF preamp until I go back to the 1962 edition. They have one using
>a 6AK5 pentode. This should give you an idea of the apparent lack
>of need for such circuits with more modern equipment.

The problem of unproper gain distrubution in various stages is still a
problem. Look at smaller ICOMs, where you can hear plenty of noise from
the IF stages, particularily with a CW crystal filter in the first IF.
Intermods spoil the reception sometimes, but such a noise spoils it
much more often. Sometimes I would like to have more RF gain

in my IC-735 on 10-20m. Perhaps my antennas are not spectacular.

>If the problem is that you are using a small voltage probe antenna,
>a FET configured as an emitter follower mounted directly on the

>something more to the liking of the receiver and coax. Again run
>enough standing current to avoid overload problems.

Emitter followers driving a coax are excellent oscilators.

>Gary
>--
>Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
>Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
>534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
>Lawrenceville, GA 30244 | |

Ignacy Misztal, NO9E

200. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 18:49:32 UTC
From: (unknown)
Message-ID: <1994Jan26.184932.7899@zds-oem.zds.com>
Source record: 118738

In article <patrick_tatro.6.7C558180@stortek.com> patrick_tatro@stortek.com (Patrick Tatro) writes:
>Im looking for a vendor willing to supply crystals in the 1 or 2 quantity
>basis. Most vendors have minimum quantities that far exceed my needs. I am
>also not sure if I can locate crystals at 16.660Mhz and 16.600Mhz. Im trying
>to convert an FM pocket tranciever into a cordless phone unit. Any help will
>be greatly appreciated.

Try Bomar Crystals

201 Blackford Avenue
Middlesex, NJ 08846- 2598

908-356-7787

They sell onesies and twosies. Usually $10.00 a pop.

Earl Morse
KZ8E
e.morse@zds.com

201. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 20:12:26 UTC
From: alanb@sr.hp.com
Message-ID: <CK96sr.Lrq@srgenprp.sr.hp.com>
Source record: 118740

Mike Stansberry (jms@col.hp.com) wrote:

: I order my crystals from either International Crystal Mfg. (ICM),
: 1-800-426-9825, or Jan Crystals, 1-800-526-9825 (just noticed the
: similarity between those numbers, ...

9825 = "XTAL"

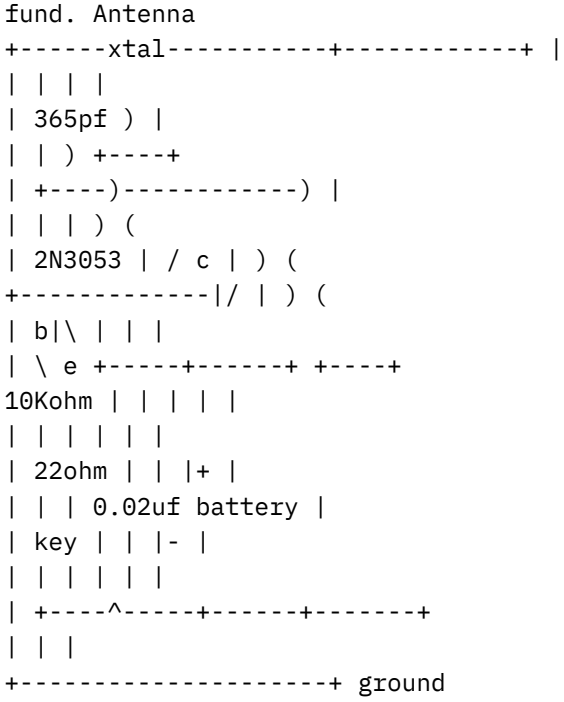
AL N1AL

202. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 22:07:27 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.759622233@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118743

> If there was a contest to come up with a xmtr containing as few
>parts as possible, this would be the winner: 10 parts if you include
>the key, battery, and antenna!

Several years ago I saved a similar (but different) 9-part
(counting a 2-winding tapped inductor as one part!) xmtr from either
73 or Ham Radio magazine. The design was "Thanks to WB6OMV" and
supposedly (I've NOT built one) ran about TWO WATTS output:



--Myron.
--
We preserve our freedoms using four boxes: soap, ballot, jury, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

--
We preserve our freedoms using four boxes: soap, ballot, jury, and cartridge.
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INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

203. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 22:08:07 UTC
From: trier@slc6.ins.cwru.edu
Message-ID: <2i6pk8$3ko@usenet.INS.CWRU.Edu>
Source record: 118744

Mike Stansberry (jms@col.hp.com) wrote:
: I order my crystals from either International Crystal Mfg. (ICM),
: 1-800-426-9825, or Jan Crystals, 1-800-526-9825 (just noticed the
: similarity between those numbers, ...

In article <CK96sr.Lrq@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>9825 = "XTAL"

It can go a step farther. 426 = "ICM" and 526 = "JAN", so the numbers
spell out 1-800-JAN-XTAL and 1-800-ICM-XTAL. I wonder if the companies
realized the similarity of their mnemonics when they chose them?

Stephen

--
Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

204. Re: want to build reciever for 108-137Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 22:51:31 UTC
From: dlkerl@cmack.b11.ingr.com
Message-ID: <2i6s5j$987@b11.b11.ingr.com>
Source record: 118741
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

Ramsey sells a kit for an aviation-band receiver. It's in the 25-30 dollar range.

Model AR-1
Ramsey Electronics
793 Canning Parkway
Victor, NY 14564
(716) 924-4560

The tuning is touchy - you might try a 10-turn pot to make it more manageable. It only covers 118-135 Mhz - you could tune the LO to cover a different range.
Dan Kerl
dlkerl@cmack.b11.ingr.com

I am not affiliated with Ramsey.

205. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-26 22:58:54 UTC
From: dlkerl@cmack.b11.ingr.com
Message-ID: <2i6sje$987@b11.b11.ingr.com>
Source record: 118742

(From a posting in sci.electronics from Christopher Webster (cxw14@psuvm.psu.edu) Tue, 1 Jun 1993 20:33:12 EDT)

> Several freeware schematic/PCB CAD programs are available via anonymous ftp
> from rigel.acs.oakland.edu (141.210.10.117). These are contained in the
> "pub/msdos/cad" directory; read "00-index.txt" first to see what's
> offered.

I've used this S/W also; it is excellent. The documentation leaves something to be desired; nowhere is it stated that you can mirror text (strings) by selecting text for moving, then typing an 'x'. Small complaint for something that's free; I've used it for several boards already.

-Dan Kerl
dlkerl@cmack.b11.ingr.com

206. HF circuit advice needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 02:35:00 UTC
From: sherrerdw@vtcc1.cc.vt.edu
Message-ID: <26JAN199421352628@vtcc1.cc.vt.edu>
Source record: 118745

Hi,

I need advice on building an induction heater of about 1 - 2 kW for
outgassing electrodes and vacuum tubes. I was considering modifing
a transmitter for this purpose. The frequency should be around
1 - 1 MHz. If someone already has something suitable I would be interested
in a possible trade, purchace, etc.

P.S. If you have an expensive power tube which needs repair I may be able
to rebuild it for you.
-thanks!
David "SHERRERDW@VTCC1.CC.VT.EDU"
or 717-993-3596

207. Re: Old Radio Elec/Pop Elec Magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 06:54:07 UTC
From: smattila@metz.une.edu.au
Message-ID: <3158@grivel.une.edu.au>
Source record: 118672

There has been some activity at around 150 kHz in Australia and
New Zealand. Circuit diagrams and construction notes has been
published in Amateur Radio, which is official WIA magazine. I don't
have any exact references at hand, but some articles has appeared
during 1993. You can get copies of this journal from WIA: Amateur Radio,
P.O.Box 300, Caulfield South, VIC 3162, Australia.

The only reference at hand is: Lloyd Butler (VK5BR, addr. 18 Ottawa Avenue,
Panorama, SA 5401, Australia) - A Bandwidth Limiting LF Up Converter
for Frequencies Around 200 kHz. Amateur Radio, December 1993, p. 4-7

In fact, this article contains references to: Butler - VLF-LF and the
Loop Aerial, (aerial is antenna here ...) Amateur Radio, Aug. 1990 and
John Adcock (VK3ACA) - The day we crossed the Tasman on Long Wave,
Amateur Radio, April 1993 (Crossing Tasman sea means contact to NZ)

I have faint idea about these US magazines. The LF articles were
quite good, but in this respect I can not help.

I hope this helps.

Sakari Mattila smattila@metz.une.edu.au The University of New England
(VK2XIN, OH2AZG) tel. +61 67 733752 Armidale NSW 2351, Australia
P.O.Box u13 ----------
Armidale NSW 2351
----

208. Re: Oscillators using MMIC's Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 07:02:21 UTC
From: smattila@metz.une.edu.au
Message-ID: <3159@grivel.une.edu.au>
Source record: 118670

There was a series of articles about VHF - UHF crystal oscillators build around MMIC amplifiers (Mini-Circuit, Avantek and some Japanese ICs) in the RF Design (USA) journal about 1989 - 1992, most probably 1991. The main idea was to make the oscillator to work directly at 100 - 500 MHz. In some circuits, the author used special, low capasitance crystals.

Sakari Mattila smattila@metz.une.edu.au The University of New England
P.O.Box u13 tel. +61 67 733752 Armidale NSW 2351, Australia
Armidale NSW 2351 (VK2XIN, OH2AZG) ----------
Australia ----------
----

209. Electronics parts stores in DC area

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 13:43:11 UTC
From: drumhell@claudette.nrl.navy.mil
Message-ID: <CKAJG0.6ws@ra.nrl.navy.mil>
Source record: 118748

I'm interested in starting a few electronics projects, but need to find a good source of electronics parts. Now don't tell me to go to Radio Shack! Their selection is *very* limited. For example, I need a toroid core to wind a transformer, but Radio Shack doesn't carry anything like that.

So, are there any *real* electronics stores in the Washington, DC area that cater to electronic hobbyists?

-Dave, KA3QBQ
--
David Drumheller phone: (202) 767-3524
Acoustics Division, Code 7140 fax: (202) 404-7732
Naval Research Laboratory
Washington, DC 20375-5350 e-mail: drumhell@claudette.nrl.navy.mil

210. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 14:29:54 UTC
From: jms@col.hp.com
Message-ID: <2i8j52$ols@hp-col.col.hp.com>
Source record: 118747

Stephen C. Trier (trier@slc6.ins.cwru.edu) wrote:
: Mike Stansberry (jms@col.hp.com) wrote:
: : I order my crystals from either International Crystal Mfg. (ICM),
: : 1-800-426-9825, or Jan Crystals, 1-800-526-9825 (just noticed the
: : similarity between those numbers, ...

: In article <CK96sr.Lrq@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
: >9825 = "XTAL"

: It can go a step farther. 426 = "ICM" and 526 = "JAN", so the numbers
: spell out 1-800-JAN-XTAL and 1-800-ICM-XTAL. I wonder if the companies
: realized the similarity of their mnemonics when they chose them?

: Stephen

Yeah, I figured out the letter to number conversion after I made that
first posting.

Mike, K0TER

211. High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 15:19:22 UTC
From: msti0087@rz.uni-hildesheim.de
Message-ID: <1994Jan27.151922.7122@rz.uni-hildesheim.de>
Source record: 118746

Hi OM`s

I need a high voltage power supply for a tube PA.
But I can`t find the right schematic and part list.
The tube runs with a current of 7000V and 2Amp.
I hope you can help me.
Thank's Martin

212. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 15:34:50 UTC
From: mb@xmb
Message-ID: <2i8muq$k53@titan.wordperfect.com>
Source record: 118759

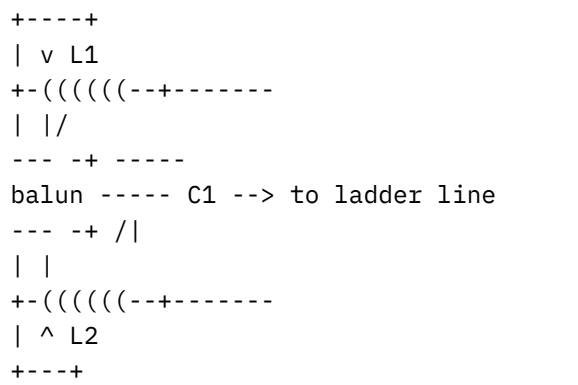
Bruce Pea (pea@wri.com) wrote:
: I'm getting ready to put a dipole up and use ladderline to
: feed it. I'm going to need an antenna tuner so I can tune
: this wire across 160-10m.

: I thought building a tuner would be a nice winter project.
: Do any of you have a favorite tuner project you would like
: to point me to?? My rig is an ICOM IC-740, 100 watts out.

: Thanks for the help!

: Bruce

Richard Measures, AG6K, wrote an article in the Feb. 1990 QST about a balanced antenna tuner, made for just such an antenna system as you describe. The balun is at the input of the tuner (i.e., between the transmitter and the tuner). The tuner itself consists of two roller inductors for the series reactances and a variable capacitor for the shunt reactance.



The roller inductors are mechanically ganged by a belt and pulleys on the inductor shafts. The idea of a balanced tuner feeding a balanced transmission line to a balanced antenna is appealing...

--
Michael Bendio WT7J mb@titan.wordperfect.com 801 222-5367
Opinions are my own and aren't necessarily shared by Wordperfect Corporation

213. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 15:49:08 UTC
From: mac20@namaste.cc.columbia.edu
Message-ID: <2i8npk$c5v@apakabar.cc.columbia.edu>
Source record: 118750

I've pretty much settled on CIRCAD from Holophase in Fl.
(thanks Al)
I did not find it on an FTP site but first found it on Online America
which had a very old version.
I called Holophase up and then later downloaded it directly from their
very small, but 14,400 BBS.
They offer a very attractive discount to Hams also for the full registered
version. The demo i have is limited in number of parts etc.. but quite
functional.

Mike Cecere
Applied Physics Department
Columbia Univeristy

214. Re: XTAL source needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 17:06:49 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2i8sb9$872@hpscit.sc.hp.com>
Source record: 118764

>In article <patrick_tatro.6.7C558180@stortek.com> patrick_tatro@stortek.com (Patrick Tatro) writes:
>>Im looking for a vendor willing to supply crystals in the 1 or 2 quantity
>>basis. Most vendors have minimum quantities that far exceed my needs. I am
>>also not sure if I can locate crystals at 16.660Mhz and 16.600Mhz. Im trying
>>to convert an FM pocket tranciever into a cordless phone unit. Any help will
>>be greatly appreciated.

Also, Hy-Q Intl. in Erlanger, Kentucky. They don't mind selling
small quantities and can give 2 day delivery if necessary.

Rick Karlquist
rkarlqu@scd.hp.com

215. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 17:23:36 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan27.172336.11233@ke4zv.atl.ga.us>
Source record: 118754

In article <2i66g2$lo5@vixen.cso.uiuc.edu> ignacy@ux2.cso.uiuc.edu (Ignacy Misztal) writes:
>gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>>In article <1994Jan25.191202.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
>>> Can anyone here give me some advice on building an antenna pre-amp
>>>for working 4 - 24 mHz? Should I go broadband or switched bands? What about
>>>pre-filtering?
>
>>Normally, a preamp is unnecessary for the HF spectrum. The usual problem
>>is inadequate rejection of strong signals. However, if you've got an old
>>deaf receiver, like say a S-28, a preamp may help. You definitely want to
>>use a selective amplifier with good sharp tuned circuits. A triple ganged
>>circuit would be a good idea. Otherwise your preamp will operate in overload
>>most of the time.
>
>A preamp may be needed for upper bands if bands are quiet and antennas
>not spectacular. A single tuned circut would cut out a mirror frequency
>pretty well. Once I build a one-transistor preamplifier with one tuned
>circuit, and it made a large difference on my SWAN 500.

SWAN 500. Well yeah, a preamp could help a SWAN. :-)

>>> What are the advantages of designing one around bi-polar or mosfet?
>>>Can anyone contribute some tried and tested circuits for me to construct?
>
>>FETs would be the more popular choice. You can tap up on the selective
>>circuits for lighter loading, hence higher Q, with less problems with a
>>FET. The old MPF102 would work for this type of circuit, but it can
>>be driven rather easily into overload. A power VMOS FET like the VMP-4
>>may be a better choice. Run about 100 ma of standing current.
>
>MOSFETs and FETS may have too low gain to drive the coax. Large-signal
>properties of a RF amplifier are not terribly important, especially
>with the tuned front. It is usually the mixer that is more susceptible to
>overloading.

Actually, the problem with modern Mosfets is in taming the *excess*
gain they possess. Many have 15-20 db of gain well into the gigahertz
region, and gain suffers a 3 db increase for every octave frequency
decrease. So at HF they're generally hotter than firecrackers. You
don't want more than 10-15 db of gain in a preamp or you'll definitely
overdrive most HF rigs into distortion and intermod. It's also a fact
of life today that strong signal handling has become the major problem
at HF. Using either very selective networks, or amplifiers with strong
signal handling characteristics, or both, is a must. Most modern receivers

use a DBM first mixer with +8 dbm or greater LO injection, so mixers aren't the weak link anymore.

>>In looking through my collection of ARRL Handbooks, I don't find a
>>HF preamp until I go back to the 1962 edition. They have one using
>>a 6AK5 pentode. This should give you an idea of the apparent lack
>>of need for such circuits with more modern equipment.
>
>The problem of unproper gain distrubution in various stages is still a
>problem. Look at smaller ICOMs, where you can hear plenty of noise from
>the IF stages, particularily with a CW crystal filter in the first IF.
>Intermods spoil the reception sometimes, but such a noise spoils it
>much more often. Sometimes I would like to have more RF gain
>in my IC-735 on 10-20m. Perhaps my antennas are not spectacular.

Indeed. With my IC-735, atmospheric noise dominates the quiet channel. Of course channels are rarely quiet. A good antenna is always a must for proper performance.

>>If the problem is that you are using a small voltage probe antenna,
>>a FET configured as an emitter follower mounted directly on the
>
>>something more to the liking of the receiver and coax. Again run
>>enough standing current to avoid overload problems.
>
>Emitter followers driving a coax are excellent oscilators.

They can be, if not properly designed. But this is more a problem with low impedance bipolar circuits than with FETS. Adding additional degenerative feedback in the emitter circuit will tame this problem. The FET will have more gain than you want anyway, so this is a viable solution.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

216. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 17:36:26 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan28.013626.1@ntuvax.ntu.ac.sg>
Source record: 118751

In article <2i68cr$isj@reznor.larc.nasa.gov>, kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
> In article <1994Jan26.001852.3038@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>>
>>In looking through my collection of ARRL Handbooks, I don't find a
>>HF preamp until I go back to the 1962 edition. They have one using
>>a 6AK5 pentode. This should give you an idea of the apparent lack
>>of need for such circuits with more modern equipment.
>
Gary is probably right but then if you look in the MFJ catalog I
am sure you will find one or two active antennas, which are quite expensive
when you consider the number of components involved. Thus in case of the
lack of a good antenna, active antennas/pre-amps still help.

> Actually, I recommend this circuit... I built it when I was a kid and
> hung it on the front of a modified Philco table radio and it worked very
> nicely to the point where the rotten selectivity of the radio was a problem.
> The manufacturer probably never expected anyone to tear windings off the
> AM loopstick to move it to 80M.
> --scott

However, a valved pre-amp was not quite what I had in mind :) I was
thinking more along the lines of the dual-gated mosfets or bi-polar types
for broadband amplification as well as for narrow band. :)

> --
> "C'est un Nagra. C'est suisse, et tres, tres precis."

73 de 9V Daniel

217. Using ICOM filters in SONY ICF-2010/2001D?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-27 17:43:20 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan28.014320.1@ntuvax.ntu.ac.sg>
Source record: 118756
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Hi,

Does anyone know if I can use the SSB filters for ICOM or for Kenwood in other radios or in my own IF strip? I am thinking of use for SSB/RTTY/CW. The reason I ask is because the Kiwa filters I want are not available locally but the ICOM filters are. Does anyone who have access to both know?

I am looking to put the ICOM narrow filters (2.4 kHz) into my SONY ICF-2010/2001D. Does anyone have any comments about doing this?

73 de 9V Daniel

218. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 01:49:00 UTC
From: janc@icebox.iceonline.com
Message-ID: <CKBGx1.57F@iceonline.com>
Source record: 118752

>I think you and anyone else interested would like Protel Easytrax. I
>bought it when it was not ShareWare (Hay how was I to know two years
>later you could get it free). I've run a few boards with it and had
>great success. And you can throw a sheet of overhead projector film in
>your laser printer and save the trouble of having the gerber files
>plotted. (About $25 for a 8x10 film)
>--
>

And where would one be able to get Protel Easytrax from? Is there a telephone
number or address that they can be reached at?

Jan Chojnacki VE7FJC

: If you eat a live toad first thing in the
janc@icebox.iceonline.com : morning, nothing worse will happen to you all
: day.
: To you or the toad.
---

219. Re: EIMAC design book?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 02:18:31 UTC
From: al838@cleveland.Freenet.Edu
Message-ID: <2i9sln$6sj@usenet.INS.CWRU.Edu>
Source record: 118749

The book you may be looking for is called "Care and feeding of
POWER GRID TUBES" by Varian EIMAC. The copyright is 1967 and I
have a copy of the fourth printing which was in 1982. The Library of
Congress number is 67-30070. The book has about 160 pages and
covers just about everything a designer needs to know about
power tubes. The price printed on the cover is $5.95 in the US.
I got my copy for free from Varian EIMAC Division, 301 Industrial
Way, San Carlos, CA 94070.

I have no idea if it is still in print or available but I hope this
lead helps.

73, Eric
--
Eric Grabowski, WA8HEB al838@cleveland.freenet.edu
Chagrin Falls, Ohio

220. Tuner modules (Have you seen any?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 04:33:45 UTC
From: dws30@p1svp10cd.amdahl.com
Message-ID: <b6H002fJ5bkP01@JUTS.ccc.amdahl.com>
Source record: 118766

I've been trying to get a hold of a few Mitsumi CATV 17, 18, or the new
19 tuner modules. If you have seen any of these laying around in fair
supply please respond. Thanks....

--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com

---

221. Crazy VFO

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 08:13:01 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2iahed$k2u@olivea.ATC.Olivetti.Com>
Source record: 118757

I cannot exlplain this to myself :

I build a VFO that is very similar to the VFO of the
"Optimized QRP Transceiver" from Roy W. Lewallen
W7EL , the only difference is that it
is not for the same frequency because I have to use it in a
etherodyne transceiver born for fixed cristal oscillatorA
operations.

The Vfo was performing good , after warming up for 20 minutes
it was moving in a range of max 20 Hz.
The frequency from power-on increase of 90-100 Hz.

The operating frequencies are from 8050 to 8190 more or less.
Output 1.5 Volts pp over a 50 ohm load.
Now the problem is that if I put the vfo inside its metal box
to make it usable and connecting the box itself to the ground of the
vfo (as it should be) etc etc ...
In a few words putting it in its
final state then it starts to become instable increasing or decreasing
its frequency of more than 800 or more Hz and trying to drift also after
more than 1 hour from power-up.

The last info I used a copper board like one for pcb scraching out copper
for making the needed wiring leaving a lot of copper for the ground connections

I hope to have done a good desriptions of the item.

Also I took out from the box the VFO and it returned to original good
performance.

IT IS DRIVING ME CRAZY !!!!!!

Roberto

222. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 11:20:41 UTC
From: c2k@ham.slc.mentorg.com
Message-ID: <C2K.94Jan28112041@ham.slc.mentorg.com>
Source record: 118668

In article <2i651o$pfd@hp-col.col.hp.com> jms@col.hp.com (Mike Stansberry) writes:

Path: hpcan240.mentorg.com!news.mentorg.com!uunet!haven.umd.edu!news.umbc.edu!europa.eng.gtefsd.com!howland.reston.ans.net!usc!elroy.jpl.nasa.gov!newncar!csn!col.hp.com!jms
From: jms@col.hp.com (Mike Stansberry)
Newsgroups: rec.radio.amateur.homebrew
Subject: Re: Antenna Tuner Project Advice Needed
Date: 26 Jan 1994 16:16:56 GMT
Organization: HP Colorado Springs Division
Lines: 23
Message-ID: <2i651o$pfd@hp-col.col.hp.com>
References: <CK8s3y.574@wri.com>
NNTP-Posting-Host: mssjms.col.hp.com
X-Newsreader: TIN [version 1.2 PL0.7]

Bruce Pea (pea@wri.com) wrote:
: I'm getting ready to put a dipole up and use ladderline to
: feed it. I'm going to need an antenna tuner so I can tune
: this wire across 160-10m.

: I thought building a tuner would be a nice winter project.
: Do any of you have a favorite tuner project you would like
: to point me to?? My rig is an ICOM IC-740, 100 watts out.

: Thanks for the help!

There are a lot of antenna coupler designs, and some folks have
favorites that they defend quite strongly, however, I've had good
luck with the 'Ultimate Transmatch' design that can be found in
older ARRL Amateur Radio Handbooks. Another design that is
supposed to be good is the 'Series Parallel Capacitance (SPC)'
that is shown in newer handbooks. I tried it and couldn't get
it to do what I wanted, so went back to the 'Ultimate'. I
haven't given up on the SPC, though, and have plans to try it
again.

Mike, K0TER

I'll second Mike's comments on the "Ultimate". I built one in the seventies, as
did a friend. I tested mine in a configuration I expected to use and called it
good. My friend tested it at 100 Watts on 20 meters into a coathanger hanging
over the curtain rod. It CAUGHT THE CURTAINS ON FIRE! (but it did load...&->)

Cheers,
Carl
--

My opinions are mine, (all mine), and do not necessarily reflect
those of my employer.

Carl Ketcham carl_ketcham@mentorg.com WA7ZBV
Mentor Graphics, Suite 300, 5295 South 300 West, Murray, Utah 84107
---

223. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 13:43:16 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan28.134316.16204@ke4zv.atl.ga.us>
Source record: 118671

In article <2i8muq$k53@titan.wordperfect.com> mb@xmb (0000-Admin(0000)) writes:
>Richard Measures, AG6K, wrote an article in the Feb. 1990 QST about a
>balanced antenna tuner, made for just such an antenna system as you
>describe. The balun is at the input of the tuner (i.e., between the
>transmitter and the tuner). The tuner itself consists of two roller
>inductors for the series reactances and a variable capacitor for the
>shunt reactance.
>
> +----+
> | v L1
> +-((((((--+-------
> | |/
>--- -+ -----
> balun ----- C1 --> to ladder line
>--- -+ /|
> | |
> +-((((((--+-------
> | ^ L2
> +---+
>
>The roller inductors are mechanically ganged by a belt and pulleys on
>the inductor shafts. The idea of a balanced tuner feeding a balanced
>transmission line to a balanced antenna is appealing...

Yes it is, but be careful of C1. It has to float hot and most variable
capacitors have one side attached to the frame making it hard to maintain
balance. You can mount it on a sheet of plexiglass, and don't forget
an insulated tuning shaft. A capacitor that has both sets of plates
insulated from the capacitor frame is best, but they're harder to find.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

224. The World's Smallest Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 14:18:56 UTC
From: sivyerb@govonca.gov.on.ca
Message-ID: <1994Jan28.141856.24304@govonca.gov.on.ca>
Source record: 118767

Jeff Herman's post about the world's smallest transmitter seems to have stirred up considerable interest. Does anyone have a collection of simple receiver circuits that could be paired with Jeff's transmitters. I would like to build a QRP station but have been away from building things for some time.

Maybe we can renew interest in construction projects.

Bob
--
****

Bob Sivyer Phone:(519-661-2714)
Systems Programmer/Analyst Internet: sivyerb@gov.on.ca
West Science and Technology Transfer Unit EPO: sivyerbo@EPO@MHS@EPO
Ministry of Natural Resources
London, Ontario
N6A 4L6 Ham Radio: VA3SI & VE3LDU

****

225. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 15:13:57 UTC
From: jjw@seastar.org
Message-ID: <CKCIBA.4zH@seastar.org>
Source record: 118763

As quoted from <2i2cdmINN5k6@abyss.West.Sun.COM> by myers@sunspot.West.Sun.COM (Dana Myers
):

> In article <CK0o0G.53D@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeff Herman)
writes:
> >Gang,
> > If there was a contest to come up with a xmtr containing as few
> >parts as possible, this would be the winner: 10 parts if you include
> >the key, battery, and antenna!
>
> I can beat this.
Me too.
> > I built this for 80M only because I've got so many 3579 kHz crystals
> >from old TV sets, but this can be used on any HF band - just choose
> >L and C to resonant at the crystal frequency.
>
> Try using a 4049 or 74C04; use one inverter as a crystal osc (two
> caps + crystal) and the other five in parallel as a buffer. Use a small
> cap to couple the antenna, maybe 100pF. It'll run off 3-15V. Lessee..
> xtal+74C04+caps+battery+key+antenna = 8 parts.
>
> The 74C04 was invented in something like 1973.
Try using a 28.322MHz oscillator (or a14 or 7 meg that I've
seen occasionally that are still in the Ham bands). Low-pass filter
this as well, and you need battery+key+oscillator+3xLPF components.
Note that these oscillators are usually not a 50% duty cycle, so a
bandpass filter would be better.
> > For peace of mind you might want to add a bandpass filter to the
> >output.
>
> or maybe a lowpass filter; that adds at least three more components.
> The 74C04 approach would really benefit from an LPF, too.

Of course, taking that approach to extremes, use an Alinco
DJ580. It is all one 'piece', including the battery, key and antenna
;-)

--
John Welch, N9JZW

226. Re: Crazy VFO

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 15:17:24 UTC
From: rdewan@casbah.acns.nwu.edu
Message-ID: <2ibaa4$t8n@news.acns.nwu.edu>
Source record: 118762

In article <2iahed$k2u@olivea.ATC.Olivetti.Com>,
Roberto Valfredini <robertov@flash.ATC.Olivetti.Com> wrote:
>
>I cannot exlplain this to myself :
>
>I build a VFO that is very similar to the VFO of the
>"Optimized QRP Transceiver" from Roy W. Lewallen
>W7EL , the only difference is that it
>is not for the same frequency because I have to use it in a
>etherodyne transceiver born for fixed cristal oscillatorA
>operations.
>
>The Vfo was performing good , after warming up for 20 minutes
>it was moving in a range of max 20 Hz.
>The frequency from power-on increase of 90-100 Hz.
>
>The operating frequencies are from 8050 to 8190 more or less.
>Output 1.5 Volts pp over a 50 ohm load.

I built mine for the 20m band and it puts out about 2vpp into a 50
ohm load. (after the buffer). An unrelated comment: did you
pick up the new buffer from the feedback column in Nov 1980 QST?

>Now the problem is that if I put the vfo inside its metal box
>to make it usable and connecting the box itself to the ground of the
>vfo (as it should be) etc etc ...
>In a few words putting it in its
>final state then it starts to become instable increasing or decreasing
>its frequency of more than 800 or more Hz and trying to drift also after
>more than 1 hour from power-up.
>
>The last info I used a copper board like one for pcb scraching out copper
>for making the needed wiring leaving a lot of copper for the ground connections
>
>I hope to have done a good desriptions of the item.
>
>Also I took out from the box the VFO and it returned to original good
>performance.
>
>IT IS DRIVING ME CRAZY !!!!!!

It would drive me crazy too. ;(

I think that there may be two things going on:
1. a long term problem such as heating that is contributing to

drift after an hour and
2. a short term problem that may be related to improper grounding/ground loops or not stiff enough connection between vfo and box. This could lead to:
- abrupt changes in parasitic capacitance and tuned frequency as components move about - not so micro micrphonics
- parasitics induced because of inductance from ground loops and parasitic capacitance. This may also explain the increased long term drift as the components get warmer.

Rajiv
aa9ch
r-dewan@nwu.edu

227. Re: Crazy VFO

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 18:20:36 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2ibl1k$5an@hpscit.sc.hp.com>
Source record: 118669

In article <2iahed$k2u@olivea.atc.olivetti.com>,
Roberto Valfredini <robertov@flash.ATC.Olivetti.Com> wrote:

>Now the problem is that if I put the vfo inside its metal box
>to make it usable and connecting the box itself to the ground of the
>vfo (as it should be) etc etc ...
>In a few words putting it in its
>final state then it starts to become instable increasing or decreasing
>its frequency of more than 800 or more Hz and trying to drift also after
>more than 1 hour from power-up.
>
>IT IS DRIVING ME CRAZY !!!!!!

Usually, I have found that "unexplainable" oscillator problems can
be traced to UHF oscillations. Many colpitts oscillators have a
capacitor from the base to ground. At UHF, the transistor becomes
a grounded base amplifier, and you know how easily those things
oscillate! Try putting a ferrite bead on the base lead of the transistor.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

228. Reciprocal mixing at 25 kHz, ICF-2010 Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 23:11:03 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jan29.071103.1@ntuvax.ntu.ac.sg>
Source record: 118675
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi,

I am experiencing reciprocal mixing of signals on my SONY
ICF-2010/2001D at about 24 or 25 kHz above the actual signal image.
Is there something i can do to fix this? Tks.

73 de 9V Daniel

229. Re: Reciprocal mixing at 25 kHz, ICF-2010 Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-28 23:44:14 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2ic80e$sb7@hpscit.sc.hp.com>
Source record: 118674
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <1994Jan29.071103.1@ntuvax.ntu.ac.sg>,
<asirene@ntuvax.ntu.ac.sg> wrote:
>Hi,
>
> I am experiencing reciprocal mixing of signals on my SONY
>ICF-2010/2001D at about 24 or 25 kHz above the actual signal image.
>Is there something i can do to fix this? Tks.

No.

230. Re: High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 00:20:52 UTC
From: (unknown)
Message-ID: <1994Jan29.002052.3191@zds-oem.zds.com>
Source record: 118760

In article <CKArGG.En5@cup.hp.com> jholly@cup.hp.com (Jim Hollenback) writes:
>Martin Stille (msti0087@rz.uni-hildesheim.de) wrote:
>: Hi OM`s
>
>: I need a high voltage power supply for a tube PA.
>: But I can`t find the right schematic and part list.
>: The tube runs with a current of 7000V and 2Amp.
>: I hope you can help me.
>: Thank's Martin
>
>hmmm, 7kv x 2 amp, about 14kw on the plate....thats one healthy afterburner.
>You should be worried about the coax feed also.
>
Even at 50 percent efficiency that will take out just about any commercially
available ham antenna and the standard feed lines. Serious competition for
Peter I this week though.

Earl Morse
KZ8E
e.morse@zds.com

231. Re: IBM-PC Shareware for PCB Photo work

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 01:19:31 UTC
From: david@djwhome.demon.co.uk
Message-ID: <759831571snx@djwhome.demon.co.uk>
Source record: 118753

easytrax is on all Simtel sites (e.g. oak.oakland.edu) and on the Simtel CDROM. The following is from the May 93 CD (info@cdrom.com).

Directory MSDOS/CAD/
Filename Type Length Date Description
==========
EASYTRAX.ZIP B 471281 930318 Protel's powerful PCB layout, freeware version

Other related items in the same directory.

GCPVU.ZIP B 320423 911104 Professional quality CAD tool for PCB design
PADSLIB.ZIP B 461934 920212 PADS library for PADSPCB.ZIP and PADSLOG.ZIP
PADSPCB.ZIP B 988785 920212 PADS PCB (printed circuit board) layout pgm
PCB.ZIP B 90057 890325 Small PC board CAD pgm w/'C' src, 286 only
PCROUTE2.ZIP B 97546 900413 Computer aided design, printed circuit boards
PFWDEM10.ZIP B 948420 920805 Protel PCB for Windows DEMO. Reqs Win 3.0/3.1
QR15R3US.ZIP B 218259 930219 Easy to use PCB & schematic design system
QRUSA.ZIP B 116834 920522 QuickRoute: Circuit board / diagram design
--
David Woolley, London, England david@djwhome.demon.co.uk

232. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 06:31:25 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CKDosF.551@iat.holonet.net>
Source record: 118761

pea@wri.com (Bruce Pea) writes:

>I'm getting ready to put a dipole up and use ladderline to
>feed it. I'm going to need an antenna tuner so I can tune
>this wire across 160-10m.

>I thought building a tuner would be a nice winter project.
>Do any of you have a favorite tuner project you would like

"A *Balanced* Balanced Antenna Tuner", February 1990 QST, page 28. Or some variation on the idea of putting a 50 ohm balun on the INPUT of the tuner, not trying to use a balun in the output to the line.

The above is a balanced L network -- with the inductance split between the legs of the line, and the capacitance across the output. You then feed this with a current balun, like a large coil of coax, or the W2DU choke balun, or even a good broadband transformer.

Another variation on this idea is the QRP Transmatch for Balanced Lines found in my 1988 ARRL Handbook (maybe later editions too). He doesn't split the inductance, but does put the balun on the input, and keeps the matching network floating.

In any case, avoid putting a toroid balun on the output when yoy're going to feed a non resonant, reactive load such as a dipole used on all bands. They are not designed for this, despite their almost universal use in commercial tuners. Another QST article, I can't remember where, documents how badly they work under reactive loads.

I use two rotary inductors, a variable capacitor, and a coax balun consisting of about 30 feet RG58 on a five-inch PVC pipe. Works great -- solved a LOT of RF problems in the shack with a balanced open wire on most HF bands.

John K0JD

233. T-368 exciter successfully transistorized!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 06:52:59 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CKDpsE.6BF@iat.holonet.net>
Source record: 118765

I have had a military surplus T368 VFO/multiplier for some time. I hooked it to my old Heath DX60 when I first got back on the air about 5 years ago, and it was a marvelous VFO -- far more stable than the mating HG10, and cost $35 from Fair Radio Sales at the time.

If you're not acquainted with the unit, it has a 1.5-3 MHz PTO, a mechanical digital readout, and doubler stages to cover 1.5-3, 3-6, 6-12, and 12-24 MHz (they say 12-20, but the dial reads to 24; probably reflects the ratings of the companion PA). It's built like a tank, and the tuned circuits in the multipliers track the PTO in typically elegant Collins fashion.

Lately I have been building up Rick Campbell's R2 receiver, and have had a 5 watt transmitter for some time, built while I was trying to see if Rick was going to provide kits! When it became apparent that he was barely able to keep up with circuit board requests, I made my own and went forward. Gradually, I realized that the old T368 would be a marvelous general-coverage VFO -- it's built like a tank, far more stable than I could ever construct.

Suggestions for transistorizing the PTO were made in Feb. 1989 QST Technical Correspondence. I adapted those ideas. so far, so good.

I was on my own on the multiplier stages. I chose to wire in JFET's, using the locally-available NTE312. One stage had a weird low-frequency oscillation, but I cured it with a series RC network. It worked! Then just broadband output stages to boost the power up for those hungry diode-ring mixers.

While I was at it, I added a tuning diode to the PTO for RIT and CW offset. I have two pots (found matching knobs at a local surplus house!) and a switch added to the front panel, and a transistor switching arrangement to select the correct pot when the transmitter is keyed. Works well with full QSK.

Does this trip anybody's trigger? Will happily provide more details if interested -- not that I've done everything absolutely right, of course, but like any experimenter, I just kept fiddling till it worked.

John K0JD

234. Re: The World's Smallest Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 08:41:30 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CKDut7.K8x@news.Hawaii.Edu>
Source record: 118758

In article <1994Jan28.141856.24304@govonca.gov.on.ca> sivyerb@govonca.gov.on.ca (Bob Sivyer) writes:
>Jeff Herman's post about the world's smallest transmitter seems to have
>stirred up considerable interest. Does anyone have a collection of simple
>receiver circuits that could be paired with Jeff's transmitters. I would
>like to build a QRP station but have been away from building things for some
>time.
>
>Maybe we can renew interest in construction projects.

What immediately comes to mind is a small pocket AM band receiver with
a converter (and of course an outboard BFO); I've got several circuits
for converting HF to the MF broadcast band. I guess it's time to quit
posting transmitter circuits and give attention to some receiving circuits.
Oh, don't forget that project # 6 or 8 (can't recall) was a simple BFO
using an IF transformer.

Again, if anyone would like all 14 of the QRP circuits just write to me.
I think over 50 people so far have asked.

Project 15 will cause a riot - I was going to wait until April Fool's Day
to post it but I can't wait that long... (it's certainly NOT QRP)

73,
Jeff NH6IL
Vietnamese Proverb: If you study you will become what you wish
If you do not study you will never become anything.

235. Re: Reciprocal mixing at 25 kHz, ICF-2010 Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 15:50:53 UTC
From: aj092@yfn.ysu.edu
Message-ID: <2ie0kt$ni@news.ysu.edu>
Source record: 118673
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In a previous article, asirene@ntuvax.ntu.ac.sg () says:

>Hi,
>
> I am experiencing reciprocal mixing of signals on my SONY
>ICF-2010/2001D at about 24 or 25 kHz above the actual signal image.
>Is there something i can do to fix this? Tks.
>
>73 de 9V Daniel
>

Steve Whitt mentions a rather detailed (but simple) fix in his book involving replacing or adding 3 or 4 capacitors in the radio's IF section. It DOES involve moving a shield and some pretty detailed solder work so it isn't for the feint of heart or those with limited soldering experience though!

Has ANYONE reading this group done the mod to see how it performs? I haven't yet -- and have been trying to see if anyone else has before I tackle it to see if it really does make a difference. I have been getting more and more annoyed by the background "rumble" on 49 metres in the evenings here, and would like to try the mod sometime t see if it helps.

73 //kvz
--
kv zichi -->bz649@Cleveland.Freenet.edu
despite what the address above may say!

236. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 19:58:22 UTC
From: zlau@arrl.org
Message-ID: <1994Jan29.195822.11876@arrl.org>
Source record: 118680

asirene@ntuvax.ntu.ac.sg wrote:
: Hi,

: Can anyone here give me some advice on building an antenna pre-amp
: for working 4 - 24 mHz? Should I go broadband or switched bands? What about
: pre-filtering?

The front end input preamplifier on page 25 of the February 1993 QST
might be a good compromise, offering 8 dB of gain and a 2 dB noise figure.
There is a good chance it will cover the entire 4 to 24 MHz spectrum as is.
A deficiency of this design is the necessity for good output matching--a
poor output match will degrade performance.

I prefer to use narrowband, fixed tuned filters, though there are
advocates of tunable filters.

: What are the advantages of designing one around bi-polar or mosfet?
: Can anyone contribute some tried and tested circuits for me to construct?

A problem with designing low noise HF preamps is that few, if any, devices
are optimized for this task. MOSFETs were primarily designed for use at
VHF and low UHF--specifications on HF noise figures seem non-existant. I
suspect that were someone to invest the $$$ for a really optimized device,
sub 0.5 dB NFs are possible. Occasionally, you can find bipolars optimized
for low VHF, such as the NEC 41603/2SC1949, touted as having a 1 dB NF at
70 MHz. The usual problem is excessive gain, which requires some form
of lossless feedback to reduce without degrading noise figure.
Theoretically, directional couplers could be used to implement feedback, but
I've not seen published circuits to duplicate.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

237. Re: High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-29 23:13:16 UTC
From: jgd@dixie.com
Message-ID: <ln6313d@dixie.com>
Source record: 118676

(Earl Morse) writes:

>>Martin Stille (msti0087@rz.uni-hildesheim.de) wrote:
>>: Hi OM`s
>>
>>: I need a high voltage power supply for a tube PA.
>>: But I can`t find the right schematic and part list.
>>: The tube runs with a current of 7000V and 2Amp.
>>: I hope you can help me.
>>: Thank's Martin

As usual, the hams display their retentiveness but no answers.

I suggest you contact Peter Dahl Inc, 4007 Fort Blvd, El Paso, Texas 79930
915 566 5365. That's a fairly old number and I don't know if
it is still good or not but that ought to give you a start.
Dahl makes custom transformers and power supplies. He has always
been cheaper than I could buy the components for, not to mention
that since he winds his own transformers, he can supply any
voltage and KVA you need.

John

--
John De Armond, WD4OQC, Marietta, GA jgd@dixie.com
Performance Engineering Magazine.

"Dr. Kevorkian, you're needed in the Oval Office."

238. Re: The World's Smallest Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-30 16:54:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jan30.165404.3107@ke4zv.atl.ga.us>
Source record: 118681

In article <1994Jan28.141856.24304@govonca.gov.on.ca> sivyerb@govonca.gov.on.ca (Bob Sivyer) writes:
>Jeff Herman's post about the world's smallest transmitter seems to have
>stirred up considerable interest. Does anyone have a collection of simple
>receiver circuits that could be paired with Jeff's transmitters. I would
>like to build a QRP station but have been away from building things for some
>time.

Ok, top this great low power AM reciever for parts count.

```
Long wire antenna coil
--------------------) diode crystal earphone
)<----->|-------()--Gnd
)
```

Wind the coil on a toilet paper tube or a Quaker Oats box. The variable tap is the "tuning" adjustment. Volume is controlled by how deeply you stick the earphone in your ear. While this receiver is optimized for AM voice, it'll work for Morse too if the matching transmitter is spark.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

239. spot my transistor.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-30 17:09:04 UTC
From: st92ba44@dunx1.ocs.drexel.edu
Message-ID: <CKGCz4.2Iv@Dunx1.OCS.Drexel.Edu>
Source record: 118678

hello all.
i'm working on a variable power supply (3-15V) for my sw radios.
i've gotten my hands on what looks like a good schematic. however, being
new at this, i can't figure out the (specific) transistors it requires.
there are two: an NPN and a HEP 232.
the most convenient place for me to get such pieces is at a local
radio shack. ..the catalog has alot of transistors...all marked either NPN
or PNP. i haven't spotted a HEP 232 (?). which one do i need? it gives
no voltage specs or anything. can i use just any old NPN? any help would
be appreciated. thanks.

---
antonio gatta
st92ba44@dunx1.ocs.drexel.edu

240. Schematics CAD, anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 05:09:59 UTC
From: uri@watson.ibm.com
Message-ID: <CKHACp.LJM@hawnews.watson.ibm.com>
Source record: 118677

```
Hi,
Is there a decent CAD program, that does schematics?
If it can _also_ output results in format either
suitable for Gerber, or compatible with other
PCB layout programs, like EasyTrax - great.
If not - I still need a tool to draw (:-).
Freeware is prefered, as usually (:-).
Also, I'd really like it to have a reasonable
library of components - for I hate to teach
a computer how to draw a transistor (:-).

Thanks! Please e-mail responses.
--
Regards,
Uri. uri@watson.ibm.com scifi!angmar!uri
------------
<Disclaimer>
```

241. KWG Xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 07:39:57 UTC
From: garret@strobe.ATC.Olivetti.Com
Message-ID: <2iickd$ks3@olivea.ATC.Olivetti.Com>
Source record: 118679

HEllo,

I' ve found xtal filter XF107A-M and XF107S95.
Have you information about this filters.

Thank in advance.

Bobba Claudio from Olivetti S.p.A Italy.

242. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 15:18:21 UTC
From: mam@cbnewsg.cb.att.com
Message-ID: <CKI2IM.K51@cbfsb.cb.att.com>
Source record: 118691

>
> Try using a 4049 or 74C04; use one inverter as a crystal osc (two
> caps + crystal) and the other five in parallel as a buffer. Use a small
> cap to couple the antenna, maybe 100pF.

I hate to be an idiot (what a leading phrase!!!) but could you draw
a simple diagram of this? I follow instructions real good, but an
not an electrical engineer.

> For peace of mind you might want to add a bandpass filter to the
>output.
>
> or maybe a lowpass filter; that adds at least three more components.
> The 74C04 approach would really benefit from an LPF, too.

More diagrams, please. I love building these simple circuits!!!

243. Mail-order toroids, RF transistors, Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 18:04:08 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb1.020408.1@ntuvax.ntu.ac.sg>
Source record: 118682
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

Can some kind hearted HAM help me order some parts from Amidon Associates Inc. I do not have the catalog so I do not know how much to send, how much for shipping, minimum order. This is for sending to Singapore where toroids are non-existent. I am also in need of MRF472 or MRF476. The toroids I am interested in are:-

4 x FT37-43 core
2 x FT50-43 core
2 x FB73-801 ferrite bead
73 de 9V Daniel 4 x T-50-6 core
2 x T-37-6 core

Would appreciate any help for ordering these stuffs. Need them fast. I need 2 MRF-472 (or MRF-476 if 472's are not available) and also a 14 mHz fundamental crystal. What is the fastest way I can get hold of these? Tks.

73 de 9V Daniel

244. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 20:11:55 UTC
From: alanb@sr.hp.com
Message-ID: <CKIG3w.LKD@srgenprp.sr.hp.com>
Source record: 118683

fsrla@aurora.alaska.edu (fsrla@aurora.alaska.edu) wrote:
: The first was a resistor with just a single black stripe
: running down the middle of it.....what is it?

Black is the color for zero. It could be a zero-ohm resistor. Don't
laugh -- we have them in our labstock here at work. Ours have a
single blace stripe painted around the body. They are used for jumpers.

AL N1AL

245. Re: The World's Smallest Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 20:53:59 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CKII20.Hzx@news.Hawaii.Edu>
Source record: 118684

In article <1994Jan30.165404.3107@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

.....<neat rcvr deleted>
>
>Wind the coil on a toilet paper tube or a Quaker Oats box. The variable
>tap is the "tuning" adjustment. Volume is controlled by how deeply you
>stick the earphone in your ear. While this receiver is optimized for
>AM voice, it'll work for Morse too if the matching transmitter is spark.
> ^^^^^^
>Gary ******
>--

Gary has mentioned the magic word! Here comes Project #15 (next article).

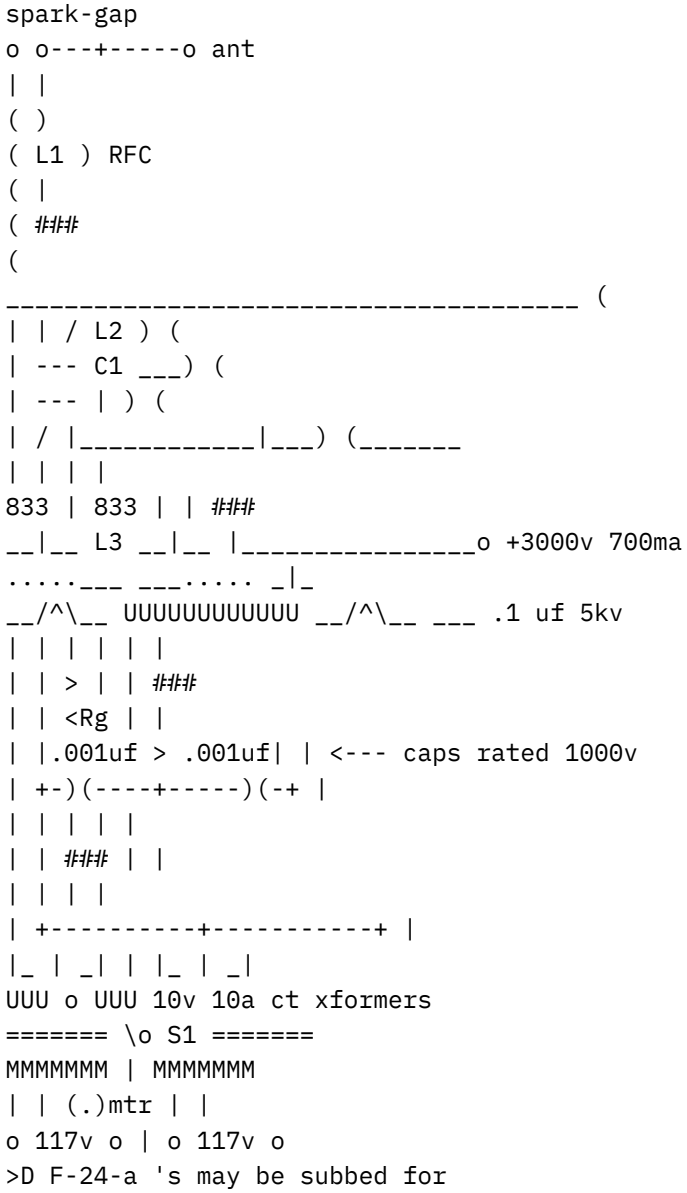
Jeff NH6IL

246. Project #15: A Spark-Gap Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 20:59:25 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CKIIB2.I1H@news.Hawaii.Edu>
Source record: 118685

Gang,
If you actually build and attempt to operate this xmtr PLEASE do not
tell the authorities, when they come to pick you up, where you got the
circuit from (I'll deny everything).
Credit Randy, KA1UNW for the design. He's a prolific builder, specializing
in the design of QRP tube xmtrs, on our QRP mail net and on the boatanchors
mail net (although this is certainly not a QRP xmtr).
Remember boys and girls, this offer is void where prohibited...

TSB xmitter



| carbon mic 833's if supply's are made
larger.

How it works:

The 2 tubes form a push pull power oscillator which makes alternating
current, but at a radio frequency.
This is done by use of L1 , L3, and the 2 little tubes.

In this case, the actual frequency is not important, since the objective
is to generate maximum bandwidth...the goal of any 'phone station.
C1 is used to obtain maximum power by resonating L1 to L2's natural freq.

This RF voltage is stepped up by a factor of 30 to 100X by L2 and sent on
to the spark-gap, where the actual RF-to-be-sent is generated.

The RFC keeps the ant ckt at DC ground, yet will not short out the RF...which
is sent from the sparkgap, to the ant.

The ant wants to be one wire, and end fed. No coax required..just hook 'er
up and duck.

The length of the antenna determines the sending band it will be on.
The formula to use to get that length is...

Feet = 468/(((F*F) +730) -(F*F))

F = frequency in Mhz (rounded off to nearest 100 Khz)

Voice modulation is done by use of a special Carbon Microphone, as used in
the 1920's...which can handle several amps.

Here, rather than sending RF thru the mic as was done back then, only DC
is sent thru.

That way, the operator (or inflictor) won't get an RF burn on his lips if
he speaks too close to the mic.

That modulates the power to the tubes , which varies the intensity of the
spark which then puts quite suitable a signal on the air.
The itellegibility will match the content of some of the QSO's now on the air.

To operate:

1 Place mouth near carbon microphone.
2 Close S1 and adjust C1 for dip in current (mtr) quickly.
3 Make oinking and Mooing noises to indicate your presence to everyone.
4 Open S1 when you get around to it.
****

Again, credit (or blame) goes to Randy KA1UWN.

Jeff NH6IL

247. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-01-31 23:56:41 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Jan31.235641.16797@cyphyn.radnet.com>
Source record: 118686

Kok Chen (kchen@apple.com) wrote:
: kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
:
: >In article <1994Jan29.213947.1@aurora.alaska.edu> fsrla@aurora.alaska.edu writes:
:
:
: Don't you have an ohm guesser^H^H^H^H^H^H^H meter handy?

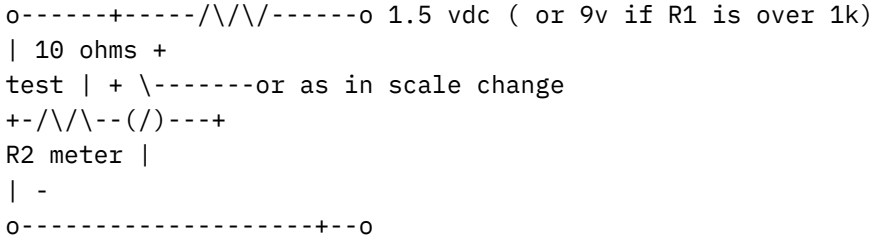
He does now...

METER SCALE for ohms

0 - 15 original scale on the meter it self, meter being a 50 ua to 1ma job

ohms

0 = 0 Scale changing:
1 = o.7
2 = 1.47 To get K ohms, change R1 to be 1 k
3 = 2.5
4 = 3.65 To get 100's K ohms change R1 to be 100k
5 = 5 and use a 9 volt battery, and meter to
6 = 6.7 be a 50 or 100ua job
7 = 8.8
midscale = 10 *
8 = 12.5
9 = 15
10= 20
11= 27.5
12= 40
13= 68
14= 145
15= infinity
* Same as R1
ckt to use:



R2...adj so meter reads infinity with open ckt at test

That can be your 'OHMS ADJUST' .... you will also need an on off switch
to not run down the battery, when not in use.

This ckt...as shown for reading LOW ohms, is one WB1FNA (silent key)
used to bring along on ham fests to on-the-spot check out transformers and
tube filaments!
--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

248. W7ZOI Progressive Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 01:14:30 UTC
From: epacyna@auratek.COM
Message-ID: <1215@auratek.COM>
Source record: 118687
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Several weeks back I met someone in the newgroup who was going to
build the subject receiver.

I have something to send you, but have lost your address.

73

Ed W1AAZ

249. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 01:24:35 UTC
From: dino@cam.org
Message-ID: <dino-310194202436@dino.hip.cam.org>
Source record: 118688

In article <CKIG3w.LKD@srgenprp.sr.hp.com>, alanb@sr.hp.com (Alan Bloom) wrote:

> fsrla@aurora.alaska.edu (fsrla@aurora.alaska.edu) wrote:
> : The first was a resistor with just a single black stripe
> : running down the middle of it.....what is it?
>
> Black is the color for zero. It could be a zero-ohm resistor. Don't
> laugh -- we have them in our labstock here at work. Ours have a
> single blace stripe painted around the body. They are used for jumpers.
>
> AL N1AL

Yes, that's right they are used as jumpers. I makes it easier in the manufacturing process to put zero ohm resistors than wire jumpers, I guess.

--

"""""""""""""""""""""""
| Dino Moriello """""""""""""""""""""""
| PO BOX 105 Internet: dino@CAM.ORG """""""""""""""""""""""
| Radisson,Quebec Compuserve: 76120,1472 Tel.: 514-974-0773 |
| CANADA J0Y 2X0 Packet: VE2DM@VE2FKB 819-638-8281 |
"""

250. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 02:21:02 UTC
From: myers@cypress.West.Sun.COM
Message-ID: <2ikeaeINN97u@abyss.West.Sun.COM>
Source record: 118696

In article 1@ntuvax.ntu.ac.sg, asirene@ntuvax.ntu.ac.sg () writes:
>In article <2i68cr$isj@reznor.larc.nasa.gov>, kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
>> In article <1994Jan26.001852.3038@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>>>
>>>In looking through my collection of ARRL Handbooks, I don't find a
>>>HF preamp until I go back to the 1962 edition. They have one using
>>>a 6AK5 pentode. This should give you an idea of the apparent lack
>>>of need for such circuits with more modern equipment.
>>
> Gary is probably right but then if you look in the MFJ catalog I
>am sure you will find one or two active antennas, which are quite expensive
>when you consider the number of components involved. Thus in case of the
>lack of a good antenna, active antennas/pre-amps still help.
>
>> Actually, I recommend this circuit... I built it when I was a kid and
>> hung it on the front of a modified Philco table radio and it worked very
>> nicely to the point where the rotten selectivity of the radio was a problem.
>> The manufacturer probably never expected anyone to tear windings off the
>> AM loopstick to move it to 80M.
>> --scott
>
> However, a valved pre-amp was not quite what I had in mind :) I was
>thinking more along the lines of the dual-gated mosfets or bi-polar types
>for broadband amplification as well as for narrow band. :)

OK. so shoot me if this is too simple.

Buy an MSA-1104 (this is in the large, easy-to-handle, plastic microwave package). I got some for $3.25/ea last week. This is a 50ohm in/out MMIC with 12-13dB of gain up to the Ghz range. It is capable of over 50mW of output combined with a noise factor of below 3.6 in the HF bands.

With DC blocking caps of 1000pF, a 100uH choke and bias resistor for 50mA of bias current, you'll have a no-pain preamp with a pretty good dynamic range.

If you feel like working just a little, try using a broad-band grounded gate J310; you can get about the same gain and IP3 but a noise figure below 1dB. Use a small ferrite balun core with a turns ratio of 4:1 (16:1 Z ratio) on the output, use a 220 ohm bias resistor, go to town. I bought a stash of J310s for $.34/ea; the additional components would make the total cost similar to the MSA-1104 circuit, with a lower NF.

On HF, a 3.5dB NF is not a big deal.

---
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

251. Build a simple 49 mhz reciever?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 07:06:38 UTC
From: adkinsg@rock-opera.cc.purdue.edu
Message-ID: <CKJAF3.BC9@mentor.cc.purdue.edu>
Source record: 118689

Hi all!

I'm wanting to play with the signals from my cordless phone, and I would like to build a simple FM reciever so I can digitize the signals between the base and handset.

The phone is a sony spp-75 with 10 "channels" operating at 49 Mhz (not one of the new fangles 900 mhz jobbies) The phone is pretty smart and won't turn on unless it can "talk" to the base.

I have a good scanner (RS pro-2004) but my dad has it and won't give it back. :-(So I want to build a simple analog tuner out of perhaps a cheapie FM radio. The only thing I care about is having the ability to digitize the "braaaap" of base/handset communication. I'll only be a foot from the base/handset so reception range isn't critical either. (Altho the computer will be on so I'll have to account for that hash..)

Any suggestions??

Thanks!
Garry

--

Garry Adkins adkinsg@symphony.cc.purdue.edu

USnail: 425-7 South River Rd. GTENet: +1-317-743-8188

252. Re: High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 08:09:53 UTC
From: jgd@dixie.com
Message-ID: <g483!l_@dixie.com>
Source record: 118690

dtiller@cscsun.rmc.edu (Dave Tiller) writes:

>: hmmm, 7kv x 2 amp, about 14kw on the plate....thats one healthy afterburner.
>: You should be worried about the coax feed also.

>Also worry about soft X-ray emission at 7kV - that kind of voltage with that
>amount of current pushing it should generate lots of low energy X-Rays.

Let's see. With an iron plate in the tube and 7kv, that should produce
X-rays with a peak energy in the 4 KeV range. That should be able to
penetrate oh, maybe 3 or 4 inches in air. It certainly wouldn't penetrate
the leaded glass envelope. Nor would it penetrate a ceramic/metal
tube envelope. A real hazard,huh? (NOT!) High current doesn't equate to
high energy. It only increases the intensity. A little knowledge is a
dangerous thing.

John

--
John De Armond, WD4OQC, Marietta, GA jgd@dixie.com
Performance Engineering Magazine.

"Dr. Kevorkian, you're needed in the Oval Office."

253. Re: Mail-order toroids, RF transistors, Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 14:37:49 UTC
From: jjw@seastar.org
Message-ID: <CKJvB2.4tq@seastar.org>
Source record: 118692
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

As quoted from <1994Feb1.020408.1@ntuvax.ntu.ac.sg> by asirene@ntuvax.ntu.ac.sg:

> I need 2 MRF-472 (or MRF-476 if 472's are not available) and also
> a 14 mHz fundamental crystal. What is the fastest way I can get hold of
> these? Tks.
>
>
> 73 de 9V Daniel

A very fast way to find a 14MHz crystal is to remove one from
an old IBM PC clone. They all have a 14.31818MHz crystal in them, and
you should have some luck finding old turbo PCs, dead, very cheaply
(like free if you know where to ask).

--
When I die, they'll bury me John Welch, N9JZW
in the Tomb of the Unknown Hacker. jjw@seastar.org

254. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 14:39:49 UTC
From: kitagawa@ee.ES.Osaka-U.AC.JP
Message-ID: <KITAGAWA.94Feb1233949@qed.laser.ee.es.osaka-u.ac.jp>
Source record: 118693

asirene@ntuvax.ntu.ac.sg writes:
9V Daniel>> Can anyone here give me some advice on building an antenna
9V Daniel>> pre-amp for working 4 - 24 mHz? Should I go broadband or
9V Daniel>> switched bands? What about pre-filtering?

Please use MHz if you mean 1,000,000 Hz. mHz is 0.0001 Hz.

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

KE4V> Normally, a preamp is unnecessary for the HF spectrum.
KE4V> The usual problem is inadequate rejection of strong signals.

True, unless the antenna is too small.

KE4V> You definitely want to use a selective
KE4V> amplifier with good sharp tuned circuits.

I prefer passive pre-filter + wideband amplifier.

Wideband (say 2-30MHz) amplifier with moderate NF (~3dB), gain
(~10dB), and 3rd-order IP can be easily built using a pair of J-FETs
in parallel in grounded gate configulation. You can use 2SK125 or
J310. Many (most?) of Japanese HF transceivers employ similar circuit.
Akizuki [in Akihabara Tokyo Japan] sells 2SK125 (You can specify class
"5" for max Idss) at about 2 $US per 5 pieces.

Once you built wideband amplifier, you can play around pre-filters as
you like and study. It can be a bunch of bandpass filters as in the
case of manufactured tranceivers. Or it can be a tuned circuit with
variable C's and L's. Or it may not be necessary if your anttena is
really small.

KE4V> A power VMOS FET like the VMP-4 may be a better
KE4V> choice. Run about 100 ma of standing current.

Yes. But when I asked Ed Oxner about his nice VMP's a year ago, he
said that Siliconix had sold their factory lines for VMP-1 and 4 and
were no longer manufacturing them. Are they still available? Then I
would like to know where I can get them.

Meanwhile I purchased some T-MOS FETs from Motorola but so far haven't
had time to experiment wideband NFB preamplifiers using them.

Siliconix had discontinued VMP-1, VMP-4, U350 (U310 quad for DBM), and
Si8901 (DMOS quad for DBM). Why? I can't understand. Maybe they had
come too early and gone too early.

masa
*--- **** ***-- *--* *-* *-* QRZ? de JH3PRR
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp>

255. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 15:49:53 UTC
From: c2k@ham.slc.mentorg.com
Message-ID: <C2K.94Feb1154953@ham.slc.mentorg.com>
Source record: 118697

In article <1994Jan29.213947.1@aurora.alaska.edu> fsrla@aurora.alaska.edu writes:

Newsgroups: rec.radio.amateur.homebrew
Path: hpcan240.mentorg.com!news.mentorg.com!psinntp!psinntp!uunet!elroy.jpl.nasa.gov!sdd.hp.com!caen!usenet.coe.montana.edu!netnews.nwnet.net!raven.alaska.edu!aurora.alaska.edu!fsrla
From: fsrla@aurora.alaska.edu
Subject: Mystery components? Help?
Message-ID: <1994Jan29.213947.1@aurora.alaska.edu>
Lines: 37
Sender: news@raven.alaska.edu (USENET News System)
Nntp-Posting-Host: aurora.alaska.edu
Organization: University of Alaska Fairbanks
Date: Sun, 30 Jan 1994 06:39:47 GMT

HELP!!!!!!!!!!
I ordered a couple of "assortment" packages from
ALL ELECTRONICS. Now, I could figure out what most
things were, but there were still some "mystery"
components that I just can't figure out.
FIRST, I ordered the 200 Assorted 1/4 watt ha
resistors for a buck assortment. (part# GRES)
I figure d out most of these except for two odd ones.
The first was a resistor with just a single black stripe
running down the middle of it.....what is it?
The second one was blue and had the following letter, number sequence.
P
RN55D
3572
FJ

Wellll.. I stopped my anti-social hardware tendencies about 5 yrs ago, and now
do mostly software... but... I believe an RN55D is a milspec 1% resistor. The
value would be 357*10^2 or 35.7KOhms. I don't remember what the FJ means...

What is this one?

The other assortment pack I got was just 200 assorted resistors, capacitors,
and diods. There were some things in here that baffled me as well.
First off, all the capacitors were strange to me. I;m used to radials and
disks, but these ones where different.
They had the following number sequences.
The fist one: 1M+ The second: .47 and the third: 1 62D
35V 2 35VK 1-35V
cicled< 8034+ 2+ 2+
Any help on these?

The first one is probably a 1uF 35 volt tantalum. The circle usually indicates the negative terminal.

The second .47uF at 35 volts -- the '+' indicates the positive terminal.

The third a 1uF 35 volt...

And, lastly, are the diods from this group.
There were a bunch of black (silicon?) diodes. The only mark they had
was a single yellow line on one edge. Any help here?

These could be anything -- the yellow line indicates the cathode end of the diode:

```
_________________|\|____________________
|/| yellow stripe end
```

two choices here -- test 'em and use 'em best as can in non-critical locations, or chuck 'em. (Or do like I do *plan* to test them, then explain to the XYL why I need 32 gazillion boxes full of parts &-)

Hope these aren't stupid questions. any help is much appreciated!
Thanks in advance!

Email at: FSRLA@AURORA.ALASKA.EDU
Roger Asbury WL7NT

Good Luck,
Carl
--

My opinions are mine, (all mine), and do not necessarily reflect
those of my employer.

Carl Ketcham carl_ketcham@mentorg.com WA7ZBV
Mentor Graphics, Suite 300, 5295 South 300 West, Murray, Utah 84107
---

256. Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 18:31:38 UTC
From: greg@netcom.com
Message-ID: <gregCKK64q.DGC@netcom.com>
Source record: 118694

I've seen a few examples of varactor-tuned VFOs (not VXO's)
in various pubs from time to time. They've always, though,
been used in receivers... ...I can't recall seeing one
used as the basis for a QRP transmitter.

In wondering 'why?' I've come up with a hypothesis: are
they very sensitive to RF, in that stray voltage from
the transmitter tends to get rectified into the tuning
circuit, thus causing all kinds of amusing keying foibles?

Greg

257. Old Microwave Oven

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 18:57:11 UTC
From: ren@rap.ucar.edu
Message-ID: <2im8m7$908@ncar.ucar.edu>
Source record: 118708

Recently a neighbor threw out a microwave oven, being an avid
recycler and former uwave repairman, I was duty bound to take it
home. Well it operates, but it leaks radiation like crazy,
(I measured it with a Schottky Barrier Diode and an LED
but that's another story...) so I'm not gonna use it (I've got a
decent Amana anyway).
Soooo.....what can I do with it? I recall reading on the
net where someone thought the Magnetron and Pwr Sup. could be used
for EME morse code transmission. But what else?
Yeah, I know I could rip the maggie apart for a refridgerator magnet.
Oh yeah, it's an old style, i.e. motorized, not digital, timer.
And I also recall somewhere about cutting off the transformer
secondary wires and rewiring for a custom power supply...
So send me your ideas, and I will summarize...
ren N0PVI
dona nobis pacem

258. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 19:08:43 UTC
From: patrick_tatro@stortek.com
Message-ID: <patrick_tatro.10.7C558180@stortek.com>
Source record: 118695

In article <CKIG3w.LKD@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>From: alanb@sr.hp.com (Alan Bloom)
>Subject: Re: Mystery components? Help?
>Date: Mon, 31 Jan 1994 20:11:55 GMT

>fsrla@aurora.alaska.edu (fsrla@aurora.alaska.edu) wrote:
>: The first was a resistor with just a single black stripe
>: running down the middle of it.....what is it?

>Black is the color for zero. It could be a zero-ohm resistor. Don't
>laugh -- we have them in our labstock here at work. Ours have a
>single blace stripe painted around the body. They are used for jumpers.

>AL N1AL

The reason zero ohm resistors are used is because automated assembly
equipment can pick and place them where they couldnt pick up a jumper wire.

259. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-01 22:31:02 UTC
From: cleveland@gvg47.gvg.tek.com
Message-ID: <8203@gold.gvg.tek.com>
Source record: 118717

Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Are y'all forgetting the Fireball transmitter?
Battery, key, dip relay, xtal oscillator at 29.060, antenna.
I think this about as minimalist as anyone could go.

Grover
WT6P

260. Re: Mystery components? THANKS!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 00:31:57 UTC
From: fsrla@aurora.alaska.edu
Message-ID: <1994Feb1.153157.1@aurora.alaska.edu>
Source record: 118713

In article <2ijdld$6c1@apple.com>, kchen@apple.com (Kok Chen) writes:
> kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
>
>>In article <1994Jan29.213947.1@aurora.alaska.edu> fsrla@aurora.alaska.edu writes:
>
>>>The second one was blue and had the following letter, number sequence.
>>> P
>>> RN55D
>>> 3572
>>> FJ
>>>What is this one?
>>
>>Two pins on it? Shaped like a disc capacitor?
>
>
> The RN55D looks suspiciously like the designator for a precision
> metal film resistor. So is the blue colour. Assuming it is an axial
> device, instead of a disc shaped device as Scott has guessed, I would
> guess that this is a 35.7 kilo ohm resistor.
>
> Don't you have an ohm guesser meter handy?
>
> 73,
>
> Kok Chen, AA6TY kchen@apple.com
> Apple Computer, Inc.

Nope, low on cash at the moment. And pretty much just starting in this
kinda thing. Most of the "mystery components" have been named now, but there
are still some that are odd. Lots of different answers to the same items.

However, I do THANK everyone INTENSLY for their help. It's obvious I need to
get out and purchase some test equipment. Thanks again, I now have names for
more than half the strange stuff I recieved.
Tantalium (spelling?) capacitors, 0 ohm resistors. So thanks again!!!!!!!!!
The blue resistors are what seem to baffle others. I got lots of different
answers on those!!!!!!!
--THANKS AGAIN!!!!----------------
Roger Asbury WL7NT
FSRLA@AURORA.ALASKA.EDU

261. IC info "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 00:47:07 UTC
From: David_Shalita.ES_AE@Xerox.COM
Message-ID: <".1-Feb-94.16:47:07.PST".*.D.R._Shalita.ES_AE@Xerox.com>
Source record: 118698

A friend of mine has a swap meet special that uses an IC marked "042P". The IC seems to take a 46 to 63 mhz input, seems to be a mixer oscillator, and has a 10.7 mhz ouput. He needs to purchase a few more. The vendor is unknown.
We would appreciate any leads to where we can purchase this IC and who the vendor might be?
Thanks and 73
Dave w6mik

262. IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 00:58:04 UTC
From: David_Shalita.ES_AE@Xerox.COM
Message-ID: <".1-Feb-94.16:58:04.PST".*.D.R._Shalita.ES_AE@Xerox.com>
Source record: 118699

```
Subject: IC info "042P"
Text:
A previous message sent had an INCORRECT reply to address..sorry
==============================
A friend of mine has a swap meet special that uses an IC
marked "042P". The IC seems to take a 46 to 63 mhz input,
seems to be a mixer oscillator, and has a 10.7 mhz ouput.
He needs to purchase a few more. The vendor is unknown.
We would appreciate any leads to where we can purchase
this IC and who the vendor might be?
Thanks and 73
Dave,
w6mik
Even a cross referenced replacement is ok.
```

263. Re: IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 02:57:59 UTC
From: dmiller@crl.com
Message-ID: <2in4rn$io@crl2.crl.com>
Source record: 118716

David_Shalita.ES_AE@Xerox.COM wrote:
: A friend of mine has a swap meet special that uses an IC
: marked "042P". The IC seems to take a 46 to 63 mhz input,
: seems to be a mixer oscillator, and has a 10.7 mhz ouput.
: He needs to purchase a few more. The vendor is unknown.

Gee, this stirs up some cobbwebs, but I forget who the
vendor was. That chip is really an SO42P. It was a
hot mixer IC in it's day.

Perhaps with the full P/N someone else will remember
the vendor...

Good Luck!

--
~~ dmiller@crl.com ~~~~~~
~ Don Miller > Opinions expressed here < "They will never forget you ~
~ ESP, Inc. > are my own! < till somebody new comes along"~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ -->The Eagles<-~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

264. Re: Old Microwave Oven

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 03:12:05 UTC
From: sltmw@cc.usu.edu
Message-ID: <1994Feb1.211208.9486@cc.usu.edu>
Source record: 118700

In article <2im8m7$908@ncar.ucar.edu>, ren@rap.ucar.edu (Ren Tescher) writes:
> Recently a neighbor threw out a microwave oven, being an avid
> recycler and former uwave repairman, I was duty bound to take it
> home. Well it operates, but it leaks radiation like crazy,
> (I measured it with a Schottky Barrier Diode and an LED
> but that's another story...) so I'm not gonna use it (I've got a
> decent Amana anyway).
> Soooo.....what can I do with it? I recall reading on the
> net where someone thought the Magnetron and Pwr Sup. could be used
> for EME morse code transmission. But what else?
> Yeah, I know I could rip the maggie apart for a refridgerator magnet.
> Oh yeah, it's an old style, i.e. motorized, not digital, timer.
> And I also recall somewhere about cutting off the transformer
> secondary wires and rewiring for a custom power supply...
> So send me your ideas, and I will summarize...
> ren N0PVI
> dona nobis pacem

I know that I am posting this instead, but maybe someone else on the net can help with this. I remember reading in an old issue of 73 (I know I have the issue in my basement) about a guy who took a microwave, and made a portable ATV station out of it. I can't remember how he did it (I didn't have my ticket then), what really sticks out in my mind is that he was able to use the cooking cavity to hold all the cameras, mountings, etc....

Anyone else remember this??

(If you can wait a little while until I go home (1-3 weeks), I will try and dig it up)

--

Daniel D Holmes " " - Marcel Marceau
Internet: SLTMW@CC.USU.EDU
AmprNet: N7NKR @ N7NKR.HOME.AMPR.ORG 44.40.1.43 [located in Salt Lake City]
N7NKR @ N7NKR.AMPR.ORG 44.40.12.10 [located in Logan]

265. Variable capacitors and fundamental xtals, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 07:31:37 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb2.153137.1@ntuvax.ntu.ac.sg>
Source record: 118701

Hi,

I am in the middle of getting parts for a 20 meter QRP transmitter. Can anyone direct me to where I can find 50 pF variable capacitors (not trimmers) with spindles which can be panel mounted? These should be air-spaced ones I guess, for the VXO.

Another thing, what is considered a fundamental frequency xtal? Are the 14.318 mHz crystals found in the TV sets considered fundamental 14.318 mHz xtals? Or should I be looking for something different?

73 de 9V Daniel

266. Re: Old Microwave Oven

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 08:54:23 UTC
From: jgd@dixie.com
Message-ID: <k593z0d@dixie.com>
Source record: 118702

ren@rap.ucar.edu (Ren Tescher) writes:

>Recently a neighbor threw out a microwave oven, being an avid
>recycler and former uwave repairman, I was duty bound to take it
>home. Well it operates, but it leaks radiation like crazy,
>(I measured it with a Schottky Barrier Diode and an LED
>but that's another story...) so I'm not gonna use it (I've got a
>decent Amana anyway).
> Soooo.....what can I do with it? I recall reading on the
>net where someone thought the Magnetron and Pwr Sup. could be used
>for EME morse code transmission. But what else?

Well you could rip off the door, jimmie the door switch, hang it
from the side of your tower, hook a giant morris kode key up to
it and send nifty secret messages to your buddy across the
neighborhood with the LEd and the Schottky diode :-)

73 John

--
John De Armond, WD4OQC, Marietta, GA jgd@dixie.com
Performance Engineering Magazine.

"Dr. Kevorkian, please report to the Oval Office."

267. Re: want to build reciever for 108-137Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 10:00:05 UTC
From: elendir@enst.fr
Message-ID: <2intj5$aui@cismsun.univ-lyon1.fr>
Source record: 118703
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

Kristopher Hurt (cyborg@infinet.com) wrote:
: Chad Berthelson (berthec@osiris.cso.uiuc.edu) wrote:
: : As the subject line says, I want a tunable receiver that will pick
: : up Air Bands (108-137 Mhz).

: You can convert any standard Broadcast FM reciever to get Aircraft. To do
: so is a matter of spreading the tuning coil (a length of copper wire in a
: coil, usually coated with wax) out pretty much as far as they can go.

Be careful that while FM broadcast is FM :), aircraft band is AM. SO that
is more than a simple mod. (At least in Europe)

Vince.

268. Re: IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 10:03:15 UTC
From: elendir@enst.fr
Message-ID: <2intp3$aui@cismsun.univ-lyon1.fr>
Source record: 118704

Donald J. Miller (dmiller@crl.com) wrote:
: David_Shalita.ES_AE@Xerox.COM wrote:
: Gee, this stirs up some cobbwebs, but I forget who the
: vendor was. That chip is really an SO42P. It was a
: hot mixer IC in it's day.

SO42P is from Signetics, no ? But I think that NS was also producing it,
though I don't promise it.

Vince.

269. Re: IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 12:38:36 UTC
From: porban@eeserv.ee.umanitoba.ca
Message-ID: <2io6sc$o2u@canopus.cc.umanitoba.ca>
Source record: 118705

In article <2intp3$aui@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:
>
> SO42P is from Signetics, no ? But I think that NS was also producing it,
>though I don't promise it.

The SO42P is from Siemens. I am not sure if anyone else produces it.
I do have data sheets for that IC. I would imagine that the 1496 is
functionally equivalent to it, but not a pin to pin replacement.
You could probably get the Siemens IC in Europe ;-)

Hope this helps, Peter
internet: orban@nrcamt.ime.nrc.ca

270. Re: Schematics CAD, anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 12:39:51 UTC
From: mac20@namaste.cc.columbia.edu
Message-ID: <2io6un$d9j@apakabar.cc.columbia.edu>
Source record: 118578

CIRCAD seems to be a really nice program.
pseudo-windows environment, "multi-tasking" capabilities,
effective use of the mouse and menu options easily accessable.

Just wanted to note that they have an 800 number for sales,
HoloPhase sales 800 528-6516

Michael Cecere
Applied Physics department
Columbia Univeristy

271. Fabricating PCB, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 13:26:18 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb2.212618.1@ntuvax.ntu.ac.sg>
Source record: 118706

Hi,
I am trying to make a mask for my PCB. I photostated the pattern onto a transparency and it looks ok but does not seem to
be very dark. Is photostat ink a sufficient blocker for the light for exposing the PCB to flourescent light? How long should I
expose the board?

73 de 9V Daniel

272. Re: IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 13:50:31 UTC
From: jstroppe@franklin.uhl.uiowa.edu
Message-ID: <2iob37$db3@nexus.uiowa.edu>
Source record: 118707

The IC Master lists another company who made that device. Solitron their part number CJSE042. Siemens have another number TBB042.
John

273. Mods to IC-3230 for 430/440MHZ + Tone burst wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 15:31:00 UTC
From: P06288@email.mot.com
Message-ID: <1994Feb2.153100.6442@schbbs.mot.com>
Source record: 118709

Anyone have the mods for an IC-3230H to add tone burst and lower the UHF band to cover 430 to 440 MHZ?? I called ICOM and they said to get the ARTSCI Mod book. I did that but no mention of the 430 to 440 addition nor the tone burst mod.

HELP! I am going to England and need the mod.

Thanks in advance.

Jim

274. Re: High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 19:38:20 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb2.193820.3326@cyphyn.radnet.com>
Source record: 118710

John De Armond (jgd@dixie.com) wrote:
: dtiller@cscsun.rmc.edu (Dave Tiller) writes:
:
:
: >: hmmm, 7kv x 2 amp, about 14kw on the plate....thats one healthy afterburner.
: >: You should be worried about the coax feed also.
:
: >Also worry about soft X-ray emission at 7kV - that kind of voltage with that
: >amount of current pushing it should generate lots of low energy X-Rays.
:
: Let's see. With an iron plate in the tube and 7kv, that should produce
: X-rays with a peak energy in the 4 KeV range. That should be able to
: penetrate oh, maybe 3 or 4 inches in air.
:
: John
:
: --
When you get up to around 16Kv, thats when you need to worry about X-rays
that can hurt.

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

275. RE: VLF/ELF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 19:45:49 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <50599@uugate.wa7slg.ampr.org>
Source record: 118711

The address of the LWCA (as of '91, anyway) was/is:

45 Wildflower Road
Levittown, PA 19057

They will likely send a sample copy of their publication if you send them
a buck and a LARGE SASE (i.e. to accomodate the size and weight of a
publication that is 8.5" x 5.5" and up to a dozen sheets...)

Recent 73 Mags (Jan, Feb, and March, presumably) have had an article on a
WWVB receiver for the purposes of using its 60 KHz signal as a local frequency
reference.

<Clint>

ka7oei@uugate.wa7slg.ampr.org (amprnet/internet)
ka7oei@wb7esh (msys)

276. Re: PROJECT 14: THE WORLD'S SMALLEST TRANSMITTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 19:56:18 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb2.195618.3503@cyphyn.radnet.com>
Source record: 118712

Jeff Herman (jherman@uhunix3.uhcc.Hawaii.Edu) wrote:

Here are some mods to make it run 50 ohm Z (as original, it would want
Hi z ants...1/2 wave etc direct connected)

```
:
: 1.5C
: --------------------------------*---------*---)(---*---------ANT
: | | | |
: | | | |
: - | ) ---
: XTAL | ) --- 3C
: - | ) L |
: | | / c ) |
: *----------------------------|/ | |
: | b |\ | |
: | 2N2188 \ e *---------
: / or any PNP | |
: \ 100K that'll work | |
: / GND |
: \ |
: | |
: *---------------------------------------*
: | |
: | |
: | ---
: | --- .01uf
: | |
: ---------*KEY*----*1 to 4 volts +*--------*
: |
: |
: GND
:
: Again, choose L&C to resonant at the desired frequency; one of the two
: should be adjustable.
```

Adding to Jeffs info.....

Knowing the freq and the inductance, do this formula to find C

25330

F^ * uh F = mhz ^ is 'squared' (F x F)

Now multiply C by 1.5 and 3 to get the 2 caps values...and BINGO! you
will be close to a 50-75 ohm Z output

Diddle the coil to get cleanest keying.

The coil will want to be a value between 3 and 20 uh for 80 mtrs, for an absolute min/max workable value.

===

Jeff.. I tried the ckt out and 15 uh , 180 uuf and 330 uuf worked with a 3579kc xtal....but I had to place a bit of ferrit slug by the coil to make it key nice into a 68 ohm resistor load (I'm a tek so, I can't air the thing)
I used a 2N3053 (NPN) so I had to turn battery umop apisdn .

Hey...where is that zillion volt spark thing I was hearing about?
Can't find it in homebrew....

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

277. Re: Antenna pre-amp design. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 21:28:47 UTC
From: steve@hi.com
Message-ID: <steve-020294152359@brainiac.hi.com>
Source record: 118714

I'm new to RF design. I've been reading the ARRL handbook, Bowick's book, Hayward's book, QEX articles, etc. I haven't seen any discussions of how to estimate the dynamic range (3rd-order intercept, etc) of a wideband RF amp.

I suppose one could obtain a good spice model of the device and do a large-signal analysis to obtain the 3rd-order intercept. Alternatively, if one had good instrumentation in the lab, one could build a prototype and measure it. I don't have spice, and I don't (yet) have much in the way of instrumentation.

Are there any design rules-of-thumb for a large dynamic range? Are MOSFETs better than JFETs in terms of large-signal linearity? Are JFETs better than BJTs?

I suppose part of the answer is negative feedback. I don't see much in the amateur press on negative feedback techniques for wideband RF amplifiers (or for IF amps, for that matter). Can someone recommend some good texts?

Thanks,
-Steve

Steve Byan internet: steve@hicomb.hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

278. Re: Mystery components? Help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 21:38:33 UTC
From: mtracy@arrl.org
Message-ID: <1994Feb2.213833.11818@arrl.org>
Source record: 118715

fsrla@aurora.alaska.edu wrote:
: The second one was blue and had the following letter, number sequence.
: P
: RN55D
: 3572
: FJ
: What is this one?

This is a millitary type resistor, 1% tolerance. RN55 is a package size, "D" is the power rating (1/4 watt, I *think*). The value is 3.57k ohms (3.57 x 10^2).

: The fist one: 1M+ The second: .47 and the third: 1 62D
: 35V 2 35VK 1-35V
: cicled< 8034+ 2+ 2+
: Any help on these?

The second one is a standard .47 uFd, 35Volt cap. The other two I am not certain about, but they *may* be 1.0 uFd.

: And, lastly, are the diods from this group.
: There were a bunch of black (silicon?) diodes. The only mark they had
: was a single yellow line on one edge. Any help here?

Hard to tell here - do they have a shiny case (glossy like glass)? They may be either rectifiers or zeners - have you measured them with an ohm meter?

Best Regards, Mike, KC1SX

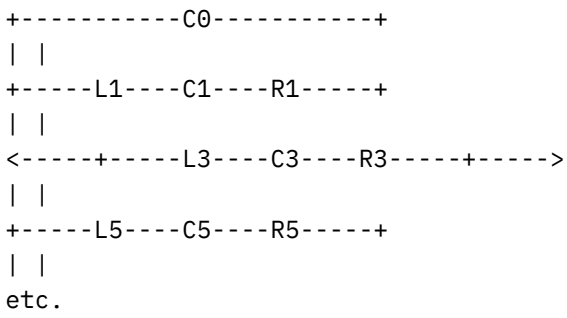
279. Re: Variable capacitors and fundamental xtals, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 22:34:41 UTC
From: alanb@sr.hp.com
Message-ID: <CKMC1u.2z0@srgenprp.sr.hp.com>
Source record: 118568

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:

: Another thing, what is considered a fundamental frequency
: xtal? Are the 14.318 mHz crystals found in the TV sets considered
: fundamental 14.318 mHz xtals? Or should I be looking for something
: different?

Any crystal can be made to oscillate on either its fundamental or overtone frequencies. The overtones occur at APPROXIMATELY odd multiples of the fundamental frequency. Note that while harmonics occur at precise multiples of the fundamental, overtones are only approximate. When a crystal is oscillating on an overtone, no fundamental energy is present. The equivalent circuit of a crystal:



C0 is the shunt (holder) capacitance. L1/C1 determine the fundamental frequency, L3/C3 the third overtone, L5/C5 the fifth overtone, etc. As you can see, the crystal is resonant on many different frequencies at once. An "overtone" crystal is one specially designed and specified to work at one of its overtones.

If your oscillator does not include a tuned circuit, it will likely oscillate at the fundamental frequency, because most transistors (and tubes) have more gain at low frequencies than high frequencies. Also, R2, R3, etc. are usually larger than R1, so the oscillator "wants" to oscillate at the fundamental.

To get the oscillator to oscillate at an overtone, you need to include a tuned circuit or other frequency-determining element in the circuit to "kill" the gain at the fundamental frequency and force the oscillator to oscillate at an overtone.

Most crystals below 20 MHz or so are fundamental. Above 20 or 30 MHz, most are overtone type. Your 14.318 MHz unit is probably fundamental.

AL N1AL

280. new Radio Communications mailing list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 23:15:48 UTC
From: martinb@nosc.mil
Message-ID: <1994Feb2.231548.26536@nosc.mil>
Source record: 118569
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

NRaD RADIO COMMUNICATIONS NETWORK

We are beginning a new mailing list for the
professional radio communications engineering
community. rec.radio.amateur.* is a well
established source of information for radio
hobbyists, but it does not meet the needs
of many commercial, military, and academic
professionals.

Therefore, we are hoping that this mailing list
will somewhat fulfill this need. Relevant topics
include: radio propagation, antenna design,
hardware design, FCC regulations, industry trends,
parts suppliers, military requirements, and
so forth. We would prefer that hobby-oriented
topics remain on the established newsgroups.

To subscribe, send a message to me at:
martinb@cod.nosc.mil

I will add your name to the list and send you an
informational message about the operation of
the mailing list. If you wish to unsubscribe,
send me a message, and I will remove your name from
the mailing list.

Brett F. Martin
Naval Command, Control, and Ocean Surveillance Center
Research, Development, Test, and Evaluation Division
(NRaD)
San Diego CA

.

281. Re: want to build reciever for 108-137Mhz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-02 23:29:27 UTC
From: cyborg@infinet.com
Message-ID: <2ipd0n$8r7@rigel.infinet.com>
Source record: 118570
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

Elendir (elendir@enst.fr) wrote:
: Kristopher Hurt (cyborg@infinet.com) wrote:
: : Chad Berthelson (berthec@osiris.cso.uiuc.edu) wrote:
: : : As the subject line says, I want a tunable receiver that will pick
: : : up Air Bands (108-137 Mhz).

: : You can convert any standard Broadcast FM reciever to get Aircraft. To do
: : so is a matter of spreading the tuning coil (a length of copper wire in a
: : coil, usually coated with wax) out pretty much as far as they can go.

: Be careful that while FM broadcast is FM :), aircraft band is AM. SO that
: is more than a simple mod. (At least in Europe)

: Vince.

Read the last couple of lines again...The last step of the mod changes
the reception from FM to AM. This mod takes all of 10 minutes to do.

Later,
Kristopher D. Hurt
cyborg@infinet.com

282. FFTMorse help please

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 02:20:49 UTC
From: aa360@FreeNet.Carleton.CA
Message-ID: <CKMMIp.BLy@freenet.carleton.ca>
Source record: 118571

I've got the enhanced version of FFTMorse put out by Rocco Caputo and for the life of me, I can't get it to work with my SBPro CT1330Rev 2 card. The program refuses to recognize my card despite the fact that I've updated the CT-Voice.drv to 2.1 and changed iterrupts/reinstalled from scratch/ etc. The card works well otherwise; just can't get Morse.exe to recognize it. It reports a card type -1 which Rocco says means that it does not recognize my card as a valid type, so my BLASTER var (a220 i5 d1 t2) is of course deemed to be wrong, and the program terminates.

Anyone have a similar problem, and played with the
morse.exe C source code to fix this annoying fatal error??!!
Or will I be forced to go to HamBlaster.....
--

283. Re: High Voltage Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 02:51:37 UTC
From: dbraun@scdtintel.com
Message-ID: <2iporp$2qk@inews.intel.com>
Source record: 118572

In article <CKI3Gw.Gyq@cscsun.rmc.edu>, dtiller@cscsun.rmc.edu (Dave Tiller) writes:

|> Also worry about soft X-ray emission at 7kV - that kind of voltage with that
|> amount of current pushing it should generate lots of low energy X-Rays.

I suspect the tube envelope would block them all...

--

Doug Braun
Email: dbraun@iil.intel.com
Intel Mail: IDC1-41
iNet: 8-435-5069 Long Distance: 011-972-4-355069
Fax: 8-435-5999 Long Distance: 011-972-4-355999
Snail Mail: US: Other:
PO Box 311 Intel Israel, Ltd.
Mendham, NJ 07945 IDC1-41
Matam Scientific Center
Haifa, Israel 31015

"There is no human problem which could not be solved if
people would simply do as I advise." -- Gore Vidal

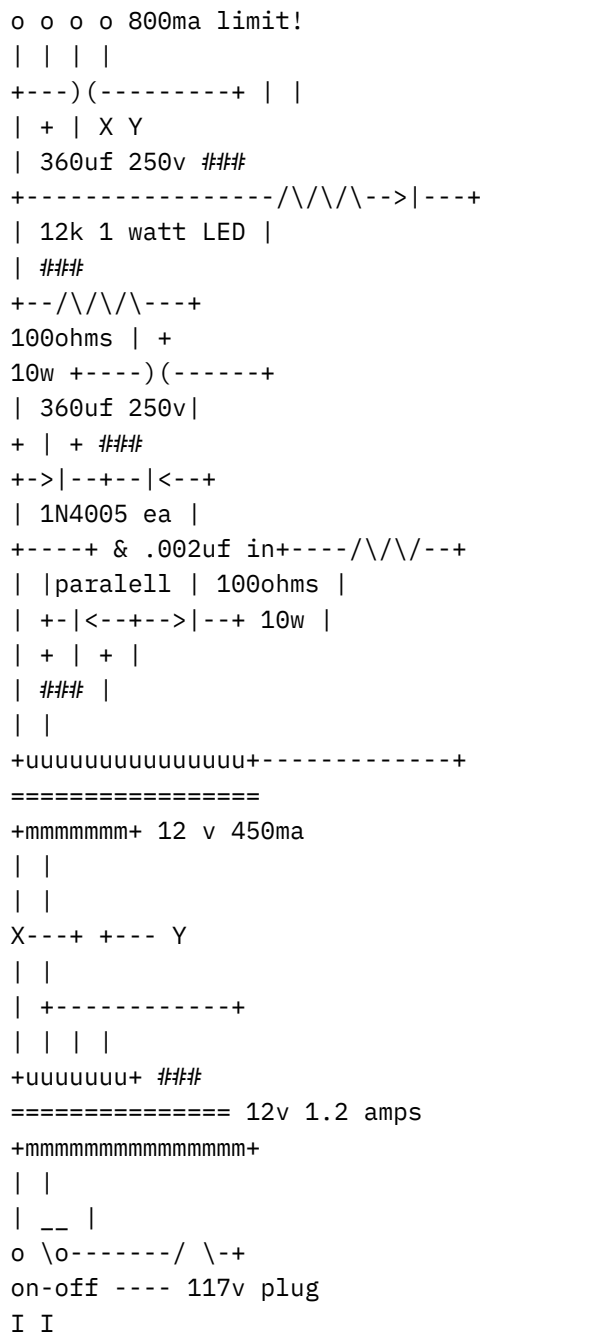
284. Vaccuum tube projects power supply 110v

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 04:31:18 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb3.043118.7233@cyphyn.radnet.com>
Source record: 118573

110volt DC supply 45ma output , with 6.3 or 12.6 volt filament supply
150v at 5-10ma

Uses 2 'filament transformers' such as at Radio Shack.

+110vdc gnd Fil 6/12 (6 to gnd, 12 if term-to-term)

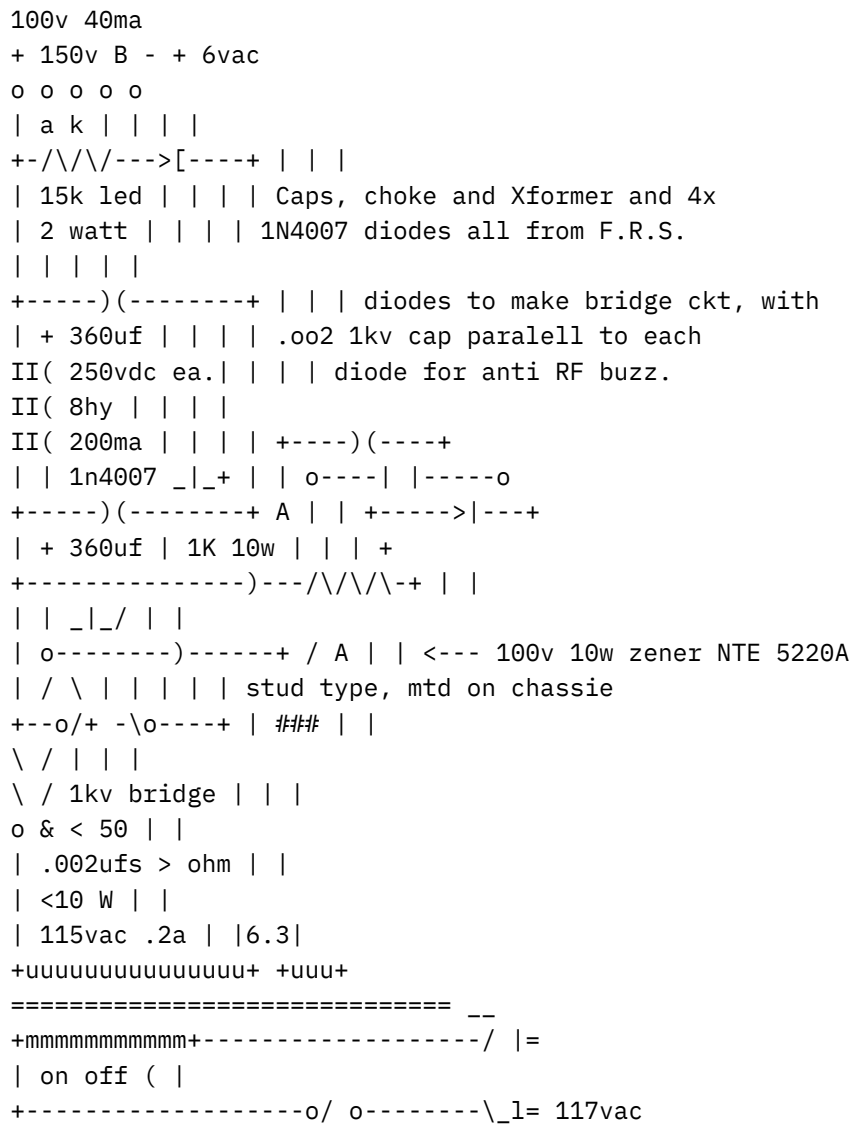


--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

285. power supply, 150v & 100regulated

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 04:33:37 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb3.043337.7290@cyphyn.radnet.com>
Source record: 118574

Power supply for small tube ckts 150vdc 100ma, 100v 40ma reg & 6.3vac 6a.



parts sources I used for this:

Fair Radio Sales , Lima Oh. tel 419-223-2196 or 227-6573 for free cat

Antique Electronic Supply Tempe Ar. tel 602-820-5411 for free cat

I abbreviate the above as FRS and AES in a lotta stuff I type/write.

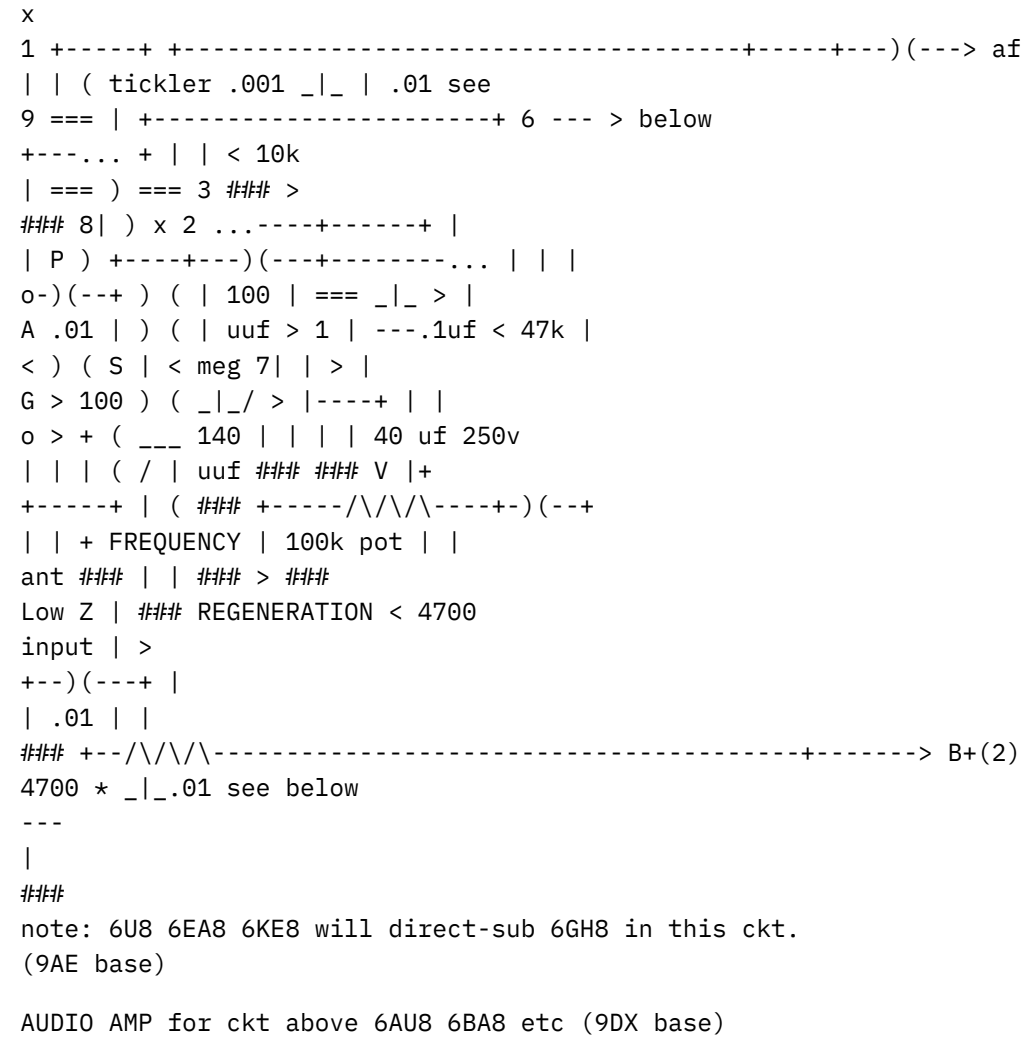
--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"

randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

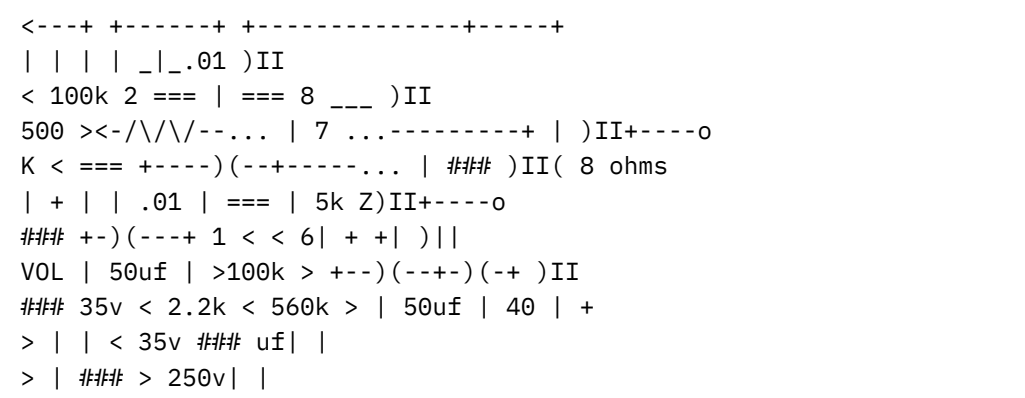
286. Simple receiver, 2 tubes

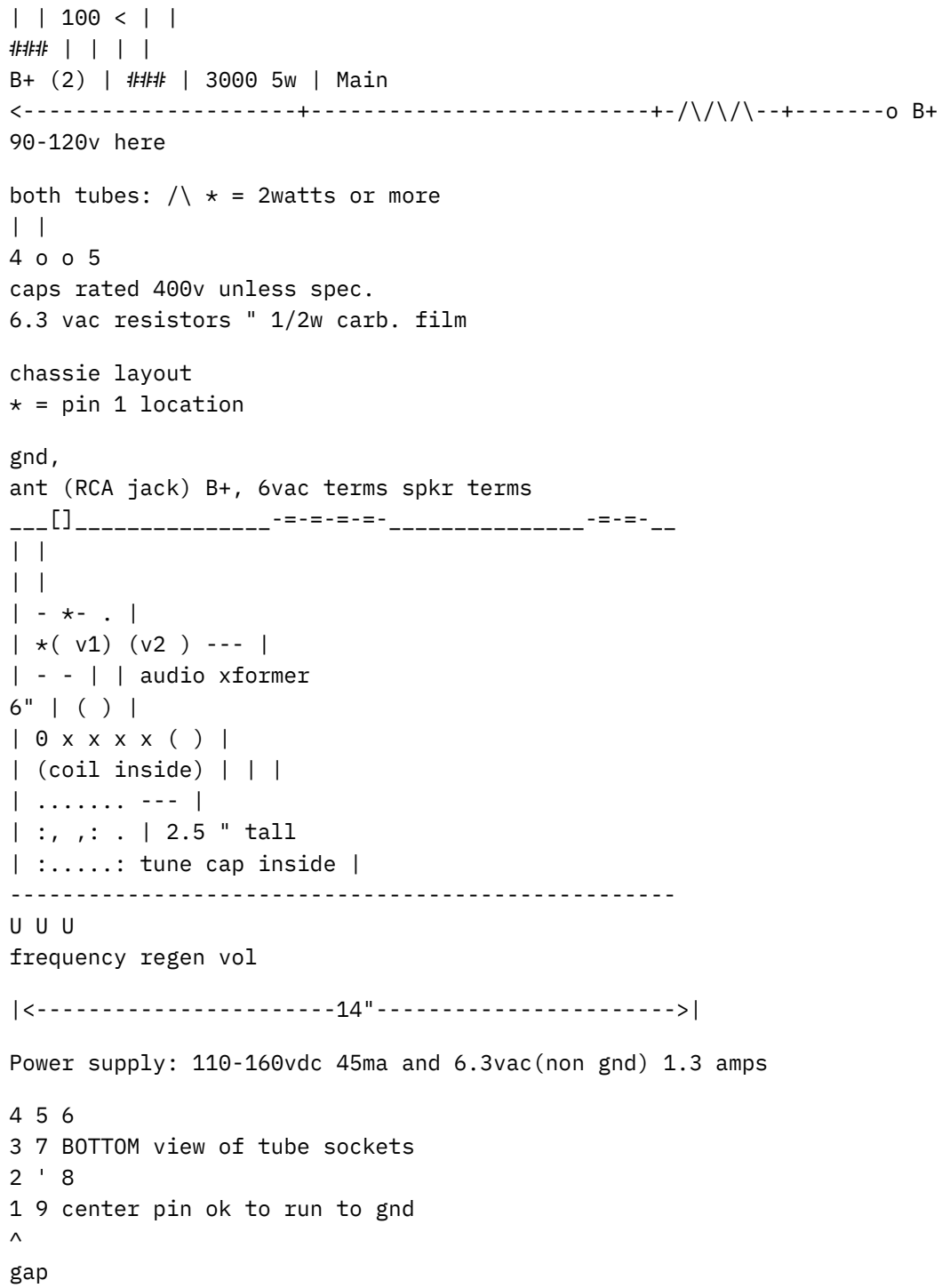
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 04:37:51 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb3.043751.7361@cyphyn.radnet.com>
Source record: 118575

6GH8 Receiver this tube is 6GH8 or similar one can be used



AUDIO AMP for ckt above 6AU8 6BA8 etc (9DX base)




| | 100 < | |
| | | |
B+ (2) | ### | 3000 5w | Main
<----------+-------------------------+-/\/\/\--+-------o B+
90-120v here
both tubes: /\ * = 2watts or more
| |
4 o o 5
caps rated 400v unless spec.
6.3 vac resistors " 1/2w carb. film
chassie layout
* = pin 1 location
gnd,
ant (RCA jack) B+, 6vac terms spkr terms
___[]_____-=-=-=-=-_____-=-=-__
| |
| |
| - *- . |
| *(v1) (v2) --- |
| - - | | audio xformer
6" | ( ) |
| 0 x x x x ( ) |
| (coil inside) | | |
| ..... --- |
| :, ,: . | 2.5 " tall
| :.....: tune cap inside |
U U U
frequency regen vol
|<----------14"---------->|

Power supply: 110-160vdc 45ma and 6.3vac(non gnd) 1.3 amps

4 5 6
3 7 BOTTOM view of tube sockets
2 ' 8
1 9 center pin ok to run to gnd
^
gap

I know this uses more modern tubes (50's 60's) but someone pointed out
that the older design is likly to radiate when in CW/SSB mode and could
qrm someone who is close by,if one does not get tuned in properly.
Only those experianced with such a set should try to use it!

This one...if built in a metal chassie with a bottom cover, and V1 gets
a tube-shield, and tune cap, coil are INSIDE.....it will not bother
any one except someone within 100-200 ft , worst case...then you'd only
need a cats-whisker radio to hear em!

I built this one some time ago, and had it on many bands to SWL with.

A bonus here, is it will want a coax cable feed, to a conventional ant.

Coil: P is to be about 1/2 the turns of S and the tickler will be
1/15 1/20 th the turns of S
observe the phasing as shown by the x on each coil in diag.

Coil dia...can be as for #77 regen set...or you can use a smaller dia,
and have to use more turns!

Coil form should be well anchored to the chassie by use of a long #6-32
machine screw and 3 nuts, to 'side-angle' mount it:

```
make snug
,---, /
(| |[]######[]## # = screw threads
head / |. | n n n= nut 3rd nut goes outside
| | on top of chassie.
| |coil form . = hole for to fish wire inside form
| . |
|. |
| ::| <--- double holes to fish wires thru
|___| 6 needed...use PCB board drill (carfully!)
```

xxxx on chassie shows which way to mount it. 0 is where 3rd nut goes

Adjust the 2nd nuts position so the coil is equally away from chassie-top
and the bottom cover...then sock-down the 3rd nut to lock it all in place.

By making the coil's wires run over to a solder-lug strip, it allows easy
removal for doing experimental work on the coil.

A plug in coil will work, but the objective is to have it well shielded,
which gets involved to do that with a plug in coil....unless coil is IN
a small can or mini-box...and a 6 pin plug is used...going to a 6 pin jack
on the chassie.

For those who want a coil for a specific freq/band I can give out that info
once I know what band is wanted.
Yes..it will work LOWFER band...if ya add one cap paralell to the tune cap.

For LOWFER, a store bought 1 mh coil is best (ya feel like winding 400 turns?)
for coil S...Digikey sells nice little and low cost ones that are just fine.
That takes care of that coil...then...you can...
fiddle with how many turns for coil P and tickler.

The 1 mh coil goes INSIDE the pvc pipe...and coil P and T are wound outside.

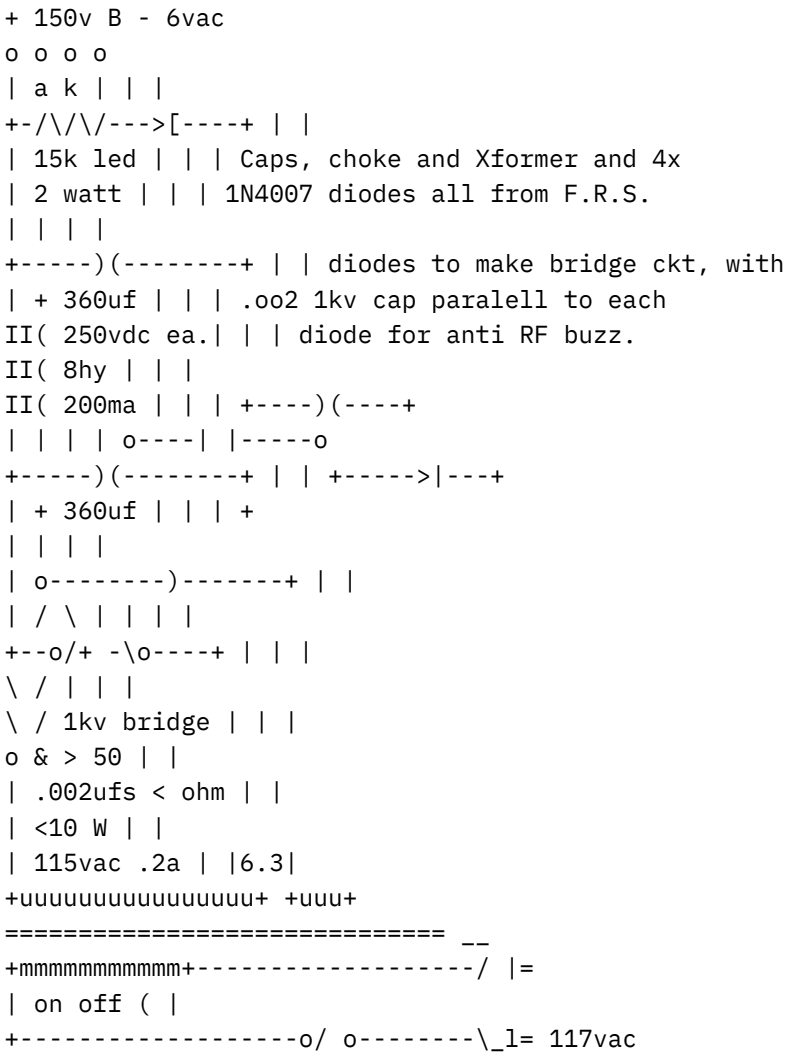
SHORT WAVE:

If you use other than 140uuf then the coil uh will need be different.

Caps of the 90----400uuf size (max mesh values) are OK here...and for LOWFER
the 300-500uuf sizes are better....the added cap is to be 680 uuf.

Fair Radio Sale and Antique Electronics supply combined, will have all the
parts you'd need...along with a hard ware store.

Use this power supply or either of the ones given before

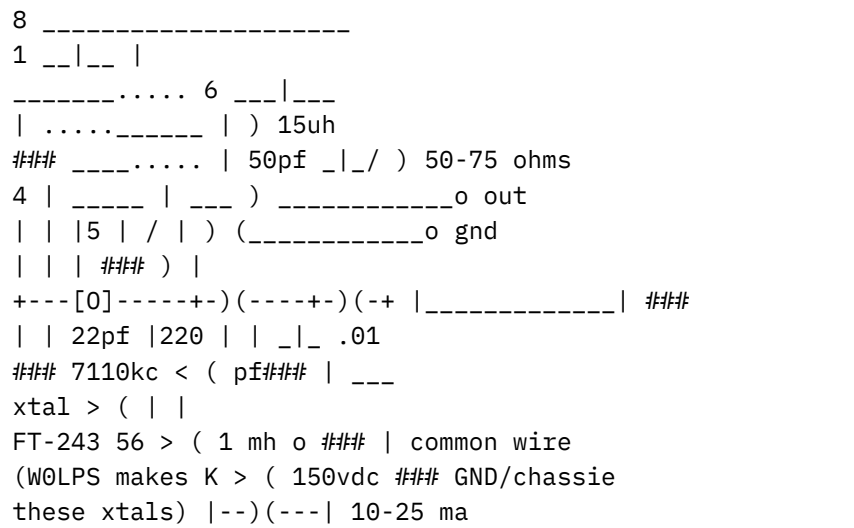

+ 150v B - 6vac
Caps, choke and Xformer and 4x
1N4007 diodes all from F.R.S.
diodes to make bridge ckt, with
.oo2 1kv cap paralell to each
diode for anti RF buzz.
1kv bridge
.002ufs < ohm
<10 W
115vac .2a
on off

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

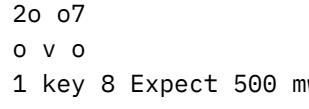
287. 1 tube transmitter, 6AG7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 04:43:26 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb3.044326.7463@cyphyn.radnet.com>
Source record: 118576

6AG7 one tube xmit 40 mtrs (daytimer)



Tube socket, BOTTOM view



15 uh ... 35 turns 7/8" dia, 1 " long
link coil 6 turns #22 to 28 wire OK

50 pf ok if FRS's 55pf trimmer cap
Xtal W0LPS (CW Crystal co)
Tube socket FRS or Antique Electronic Supply (AES)

150vdc is from the supply given earlier
6.3 volts, from same.

You can run both receiver and transmitter off same supply

Note...a 6CL6 or 12BY7 (different socket wiring) will work the same
as this one will....so, a sub of tube (and rewire socket) can be done.
Those 2 tubes are 9 pin mini tubes
12HG7 will sub 12BY7 directly. (if ya need info on that, buzz me)

Note... a 5902 sub-mini tube (direct-solder in like a transistor)
will also work in ckt above, but B+ must be dropped to 90-120vdc.

Tune up: Altho a 3 volt 25 ma bulb in series to the key will work as
a current indicator, you can use station Rx set to tell when it is
correctly tuned (least chirp & raspyness as you key).
Full power does not quite occur at same point as best keying does...
no loaded osc ever does....but you'll have same S-reading 'out there'
so just go for a clean sig.

Start with the 50pf at full mesh, tap the key repeatedly and adj
the cap until you hear the signal (see it on bulb as a sudden change
in britness)..or see it on a watt meter (good luck!), if it can read
that low.
Then adj for cleanest signal.

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

288. 1920's 1 tube transmitter, #26

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 04:54:28 UTC
From: randy@cyphyn.radnet.com
Message-ID: <1994Feb3.045428.7575@cyphyn.radnet.com>
Source record: 118577

```
UNW T-1 Triode Tube Transmitter

No. 26
+----------+----------+
2| | |
===== | )
+------+----------..... _|_/ L1 )
| | 3 _ C1 --- 50pf ) ___________o ant
| > / \ / | ) (
_|_ < 1| |4 | ) ( L2
Xtal [ ] >47 K | | | | `-----+-----o gnd
--- < | | | o.01uf | |
| > | | |---)(-----+ ###
| | | | | |
### ### o o ### o
fil. 1.5v B+ 100v 12ma.
1 ampere *

|
### = gnd buss
B-

* Fil volts come from 6.3vdc, via 5 ohm resistor
each fil pin gets o.01 uf to gnd buss

Key will go from one of fil pins, to gnd

L1... 80mtr-- 40uh 40mtr--- 20uh

L2... 1:6 turn ratio ( low z out)
inter-wound on cold end of L1

Max power obtained : 270 mw

No. 26 Tube Transmitter, Const.

Front view

.-----------------------------------------------.
| o ant |
| |
| - |
| / \ |
| | . | |
| \ / |
| - |
| o gnd C1 key o o |
```

o fahnstock clip

Top view

Fahnstock clips

B- B+ A- A+

Dimensions simply cut to suit stock and parts sizes

Tube socket, a 4 pin 'standard' , flange type, was mounted
by using long threaded #6-32 rod and 4 nuts each.

Crystal socket (Also at W 0 L P S) was mtd using #4-40 rod

Rod was obtained at 'Home Depot' hardware store.

Coil form is PVC pipe, sanded with #250 grit to give it 'grip'
for the #24 wire...then varnished to lock the turns.

(If anyone wants the coil winding formulas, contact me)

73's

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Pete Keyes
You might break an expensive tube!

289. Securing VXO coils, what glue?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-03 18:14:01 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb4.021401.1@ntuvax.ntu.ac.sg>
Source record: 118579
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

I am winding some coils for a VXO and want to know if
the "glue-gun" melted plastic is suitable for securing the coil
or if it is too lossy?

73 de 9V Daniel

290. Re: IC Info, "042P"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-04 01:59:18 UTC
From: smattila@metz.une.edu.au
Message-ID: <3245@grivel.une.edu.au>
Source record: 118580

The SO42P IC is a mixer, only manufacturer I know is Siemens in Germany.
There are many circuits for SO42P in German and UK electronics magazines.
This IC is good up to about 200 MHz.

Sakari Mattila smattila@metz.une.edu.au The University of New England
P.O.Box u13 tel. +61 67 733752 Armidale NSW 2351, Australia
Armidale NSW 2351 (VK2XIN, OH2AZG) ----------
Australia ----------
---

291. Old Microwave Ovens > New TV Xmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-04 15:10:58 UTC
From: stevej@pillock.moron.vware.mn.org
Message-ID: <Zoa9gc1w164w@pillock.moron.vware.mn.org>
Source record: 118581

A bit of History:

In about 1986-88 the British Amateur Television Assoc. published in their newsletter a spoof article about using the magnetron tube in a microwave to create a 2.4ghz FM TV transmitter. I do not remember the author.
There was a lot typical british humor thoughout the article but in the end my buddy Chris (G4JEC) and spent weeks arguing whether it could be done.

Fast forward to June 1989:

I had just received my July issye of 73mag and on the front cover in small letters "Microwave oven ATV is here!". I was ecstatic when I saw the article and I must have laughed for 5 minutes. My oven is still in the garage

The title of the article is:

ATV Transmitter from a Microwave Oven!
Author - David Pacholok KA9BYI
Page - 54
73 Amateur Radio - July, 1989

250 Watts - Be careful!

Steve KA0VYB

Microwavers do it with higher frequency

292. Re: VLF/ELF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-05 07:34:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940205073440OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 118582

>I have been looking for some reference material on VLF and have been
>unable to find any. Can anyone point me to any material on VLF receivers
>? I am especially interested in receiving (is it WWVB?) on 60 kHz, but
>would also be interested in the unlicensed band at (what I think is 1750
>meters).

"Low-Frequency Receiving Techniques"
Radio-Electronics, March-July 1983
R.W. Burhans

"WWVB 60KHz Frequency Comparator Receiver"
73 Magazine, September 1972

"Experiment With WWVB"
Radio-Electronics, August 1973
by Don Lancaster

"Cub 54, Where Are You? (Or How to Navigate Using Mini-O)"
Series of articles on the Omega system and how to receive/use it.
Byte, February, March, April 1977
R.W. Burhans

For the format of WWVB see
NIST Special Publication 432

"The low and medium frequency Radio Scrap Book"
Ken Cornell, W2IMB
Information on circuits for VLF & Lofer operation (receiving
and transmitting).

Code of Federal Regulations,
Title 47
FCC regs part 15
section 15.217 operation in the band 160-190 Khz
(lofers. You should read all of part 15 though).

"A Computer-Controled LORAN-C Receiver for Precision Timekeeping"
David L. Mills
Electricial Engineering Department
University of Delaware
Technical Report 92-3-1
March 1992
path: louie.udel.edu in /pub/ntp/loran.tar.Z

"Using the World's Most Accurate Frequency Standard, Part 1"
73 Amateur Radio Today, January 1994

"LORAN-C User Handbook"
Department of Transportation
Coast Guard
May 1980
COMDTINST M16562.3 (old GC-462)
Introduction and overview of LORAN-C system, system locations/coverage areas, pulse formats etc.

"Using LORAN-C for Time and Frequency Calibration"
Radio-Electronics, July 1983
R. W. Burhans

293. Re: Tx/Rx antenna switching, QSK circuit. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-06 03:51:02 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CKsAp7.429@iat.holonet.net>
Source record: 118584

asirene@ntuvax.ntu.ac.sg writes:

>Hi,

> Does anyone have a circuit for TX/RX antenna switching which does not
>use relays. Diodes are good but how do I use them. This for 20 meters mainly
>but also for broadband RX. Will the below work for 6 watts TX output, will it
>fry my frontend?

```
> Tx Out 6 watts 20 meters >------o------------------> 50 ohm antenna
> |
> === 51 pf
> |
> o-------------> Rx input
> |
> o-----o
> | |
> --- ---
> ^ \ / Both diodes are IN914 types
> / \ v
> --- ---
> | |
> Ground >------o-----o--------> Rx Ground and Coax shield
```

> Will the circuit work? How will the 51 pF affect the final Tx filter?
>Since the 51 pF should in theory go in parallel to the last output capacitor?
>Also do I need a choke before feeding into the Rx input?

> Appreciate any help and comments. Also welcome other viable options.

>73 de 9V Daniel

This is a real standard circuit. Two things to remember, though:

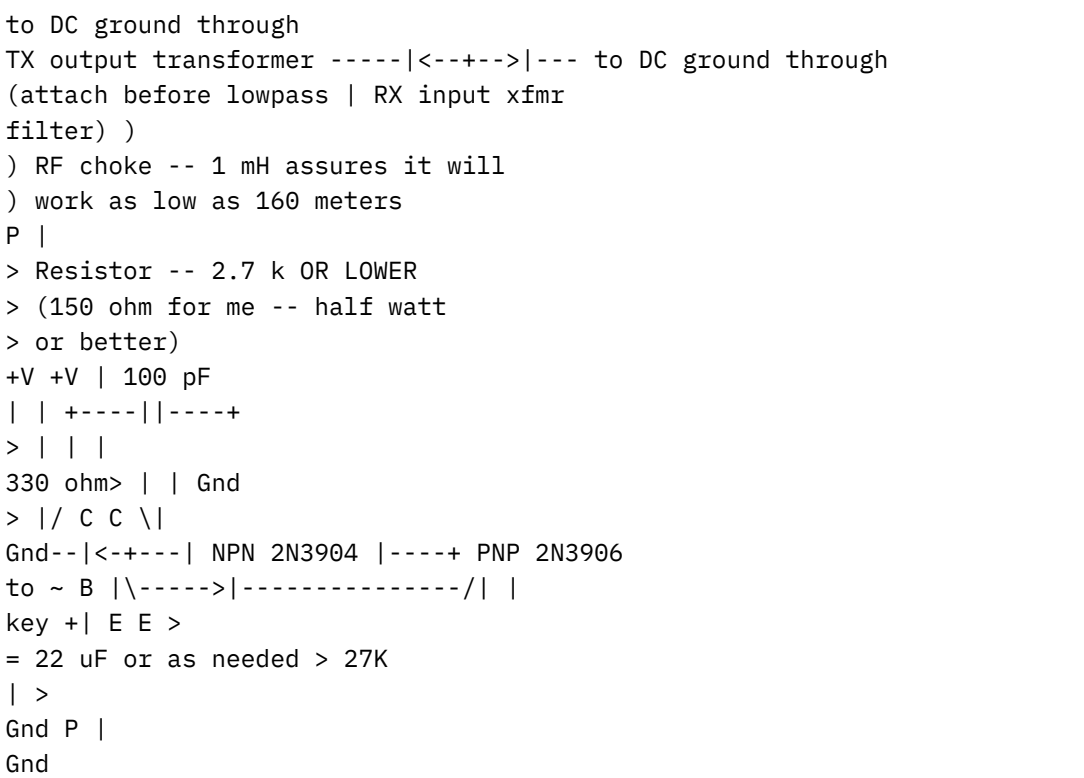
1) On transmit, the 51 pF cap becomes part of the first shunt leg of
the output low-pass filter. Compensate accordingly.

2) You CAN add a series inductor that resonates with the series
capacitor on receive to reduce signal loss. Lots of articles recommend
this.

In ARRL's "QRP Classics", page 272, they recommend a capacitor with a
reactance of 400 ohms, which means 56 pF at *40* meters (lower for 20
meters). Other articles in that collection use the series tuned circuit
approach.

As you can see, this is a problem for a broadband situation, plus it
means a received signal *loss* even under the best of circumstances.

That means you should probably consider a true active diode *switch* to protect your receiver. It works better anyway, though it consumes more DC current if that's a portable concern. My switch was taken from QST Hints and Kinks, July 1990 page 38, with added switching circuitry -- a separate transistor switch (ground a + voltage to ground to turn off) with correct time constants to stay "off" until the keyed CW envelope goes to 0. You may not need the NPN switch depending on what your TX provides -- you could take it off the keyed voltage to your keyed stages. But I needed independent control of timing to tame a "spike" of full RF power on key-up. 1N914's work fine for around 5 watts
Of course, you may need another RF choke for the ground return if by some chance the RX input doesn't go to DC ground.


to DC ground through
TX output transformer -----|<--+-->|--- to DC ground through
(attach before lowpass | RX input xfmr
filter))
) RF choke -- 1 mH assures it will
) work as low as 160 meters
P |
> Resistor -- 2.7 k OR LOWER
> (150 ohm for me -- half watt
> or better)
+V +V | 100 pF
| | +----||----+
> | | |
330 ohm> | | Gnd
> |/ C C \|
Gnd--|<-+---| NPN 2N3904 |----+ PNP 2N3906
to ~ B |\----->|---------------/| |
key +| E E >
= 22 uF or as needed > 27K
| >
Gnd P |
Gnd

I needed a LOT of diode current -- about 50 mA -- to assure enough conduction to eliminate broadcast interference from a 50 kW AM station about 5 miles away! You may not need this much.

This is my method. I'm using it with the Campbell R2 receiver, Jan 93 QST. I also have an RIT circuit that switches two pots to adjust the voltage to a tuning diode -- I have both a transmit and receive offset pot on the front panel, with a switch to select only the transmit pot for spotting or SSB. With a very fast time constant on receive recovery, I can hear between dits and dahs at about 15 wpm -- I don't run much faster than that at QRP power!

John K0JD

294. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-06 11:32:46 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2j2kgu$bg@usenet.INS.CWRU.Edu>
Source record: 118583

There's no reason not to use one in a transmitter. The problem is that they tend to drift with temperature changes.

Given that good air-variable capacitors are expensive, the future may have more varactor designs. You won't see much of a dent until the air-variable junkboxes start to empty.

If you want more stability, you need a feedback loop. A PLL or a frequency counter (a.k.a. a Human PLL) would work.

Stephen

--
Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

295. EXAR 2123 sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-07 19:01:59 UTC
From: bapplega@isd.CSc.COM
Message-ID: <9402071901.AA05826@isd.csc.com>
Source record: 118585

Does anyone know where I can buy small quantities of the EXAR 2123? It's used on the MFJ 2400 baud TNC modem.

Thanks,
Bob
bapplega@isd.csc.com

296. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-07 19:02:51 UTC
From: tomb@lsid.hp.com
Message-ID: <CKvBKr.HMn@hpcvsnz.cv.hp.com>
Source record: 118586

Greg Bullough (greg@netcom.com) wrote:

: I've seen a few examples of varactor-tuned VFOs (not VXO's)
: in various pubs from time to time. They've always, though,
: been used in receivers... ...I can't recall seeing one
: used as the basis for a QRP transmitter.

Actually, in a sense, there are a whole lot of them: as VCO's in PLLs in things like handhelds. As someone else pointed out, they aren't particularly temp stable, but a bit of feedback can solve that problem. And you can frequency or phase lock them quite easily: frequency locking is especially easy, since if you assume that the VCO won't drift too much in a single count period (say 1/10 second), you only have to keep track of the least significant bits to get enough info for a correction. Continuing the example, 4 bits of count could correct +/- 70Hz each 1/10 second, and if you feed the correction into an integrator, it will track. If you have a drift that large, you probably need to work on the open-loop characteristics anyway, before closing the loop. Anyway, the result would be a 10Hz reference, a 4 bit counter, a 4 bit latch to save the "desired", a 4 bit adder (actually subtracter) to find the error, a 4 bit DAC (4 resistors driven from the CMOS output of the adder), and an integrator. You could put all that in a FPGA (including the reference generator and timing stuff) pretty trivially. But you can also do it with common parts that have been available since the late '60's...

(Refinements are possible: for example, you can make the "DAC" nonlinear so that if the frequency is close, undersize corrections are made, so that there is less "hunting" tendency.)

73, K7ITM

297. BALUN FOR 2-M YAGI

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-07 19:25:06 UTC
From: shane@mdd.comm.mot.com
Message-ID: <2j64ii$5ip@granny.mdd.comm.mot.com>
Source record: 118587
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

This has probably been covered many times before. In any case...
Can anyone suggest a design for matching a 50-ohm coax feed to a six beam,
2 meter Yagi. The balun designs I've seen all seem to be restricted to
frequencies less than 100MHz. There must be a classic technique, I just
can't find it!

73
Hugh
N7UAX

298. Re: Microphones & motorcycle helmets

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-07 20:56:55 UTC
From: alanb@sr.hp.com
Message-ID: <CKvGuw.Gqy@srgenprp.sr.hp.com>
Source record: 118588

Tim Ikeda (timi@mendel.berkeley.edu) wrote:
: I'm wondering if anyone has a good system for reducing the wind
: and engine noise picked up by full-faced helmet microphones.

They're expensive, but the noise-cancelling mikes used in airplanes
do an incredible job.

AL N1AL

299. T-368 transistorization

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 06:07:57 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CKw6DC.GBH@iat.holonet.net>
Source record: 118589

I got about 5 requests for more info on transistorizing the T-368 exciter as a VFO for ham projects. I've got a nice long reply for anybody who wants it by individual E-mail and/or snail mail. Let me know

John Seboldt K0JD

300. 2m/70cm linear - circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 08:07:57 UTC
From: dtock@nyx.cs.du.edu
Message-ID: <1994Feb8.080757.1530@mnemosyne.cs.du.edu>
Source record: 118590

I use a dual band Icom HT in the car. Having bent longer aerials, I now use a 1/4 wave. I could do with more 'oomph' but find commercial dual band linears excessively pricey - typically between 250 and 400 UK pounds.

Can anyone give me pointers to published designs or suitable circuits to build one myself? Other comments or suggestions welcomed.

Thanks

David (GM0SYA)

301. Re: 2m/70cm linear - circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 15:25:16 UTC
From: patrick_tatro@stortek.com
Message-ID: <patrick_tatro.16.7C558180@stortek.com>
Source record: 118591

In article <1994Feb8.080757.1530@mnemosyne.cs.du.edu> dtock@nyx.cs.du.edu (David Tock) writes:
>From: dtock@nyx.cs.du.edu (David Tock)
>Subject: 2m/70cm linear - circuit wanted
>Date: Tue, 8 Feb 94 08:07:57 GMT

>I use a dual band Icom HT in the car. Having bent longer aerials, I now
>use a 1/4 wave. I could do with more 'oomph' but find commercial dual
>band linears excessively pricey - typically between 250 and 400 UK pounds.

>Can anyone give me pointers to published designs or suitable circuits to
>build one myself? Other comments or suggestions welcomed.

>Thanks

>David (GM0SYA)

David
Communication Concepts Inc. has a kit for 2 meters that sells for $119
that can take 5 watts to 50 or 60 watts and they also sell 70cm linear kits
for $159. I don't know if this fits your needs, but I built the 2 meter
amplifier and it works great. If you need their address, Email me.

73's
Patrick Tatro N0WCG

302. Re: 2m/70cm linear - circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 16:40:11 UTC
From: mack@ncifcrf.gov
Message-ID: <CKwzMz.9Ks@ncifcrf.gov>
Source record: 118592

In article <patrick_tatro.16.7C558180@stortek.com> patrick_tatro@stortek.com (Patrick Tatro) writes:
>In article <1994Feb8.080757.1530@mnemosyne.cs.du.edu> dtock@nyx.cs.du.edu (David Tock) writes:
>>From: dtock@nyx.cs.du.edu (David Tock)
>>Subject: 2m/70cm linear - circuit wanted
>>Date: Tue, 8 Feb 94 08:07:57 GMT
>
>David
> Communication Concepts Inc. has a kit for 2 meters that sells for $119
>that can take 5 watts to 50 or 60 watts and they also sell 70cm linear kits
>for $159. I don't know if this fits your needs, but I built the 2 meter
>amplifier and it works great. If you need their address, Email me.
>
>73's
>Patrick Tatro N0WCG
>
Really?
I know someone has a kit, but it was 28V (my car is 12V). Are these
12V and do they have the R/R relays for this price.?
Joe Mack NA3T
mack@ncifcrf.gov

303. Re: 2m/70cm linear - circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 17:21:47 UTC
From: patrick_tatro@stortek.com
Message-ID: <patrick_tatro.17.7C558180@stortek.com>
Source record: 118593

In article <CKwzMz.9Ks@ncifcrf.gov> mack@ncifcrf.gov (Joe Mack) writes:
>From: mack@ncifcrf.gov (Joe Mack)
>Subject: Re: 2m/70cm linear - circuit wanted
>Keywords: Kits
>Date: Tue, 8 Feb 1994 16:40:11 GMT

>In article <patrick_tatro.16.7C558180@stortek.com> patrick_tatro@stortek.com
>(Patrick Tatro) writes:
>>In article <1994Feb8.080757.1530@mnemosyne.cs.du.edu> dtock@nyx.cs.du.edu
>(David Tock) writes:
>>>From: dtock@nyx.cs.du.edu (David Tock)
>>>Subject: 2m/70cm linear - circuit wanted
>>>Date: Tue, 8 Feb 94 08:07:57 GMT
>>
>>David
>> Communication Concepts Inc. has a kit for 2 meters that sells for $119
>>that can take 5 watts to 50 or 60 watts and they also sell 70cm linear kits
>>for $159. I don't know if this fits your needs, but I built the 2 meter
>>amplifier and it works great. If you need their address, Email me.
>>
>>73's
>>Patrick Tatro N0WCG
>>
>Really?
> I know someone has a kit, but it was 28V (my car is 12V). Are these
>12V and do they have the R/R relays for this price.?
> Joe Mack NA3T
> mack@ncifcrf.gov
Joe
The kit I built was 12V - I don't know what you mean by R/R relays - The
amp was a mono bander - It was real easy to assemble - It took abt 5 hours to
assemble and 1 hour to tune the SWR's . If you need more info contact
Communication Concepts Inc.
508 Millstone Drive
Beavercreek, Ohio
45434-5840

ph 513-426-8600

73's
Patrick Tatro N0WCG

304. QRP shopping list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 19:50:03 UTC
From: randolph@est.enet.dec.com
Message-ID: <CKx8tG.K85@ryn.mro.dec.com>
Source record: 118594

With flea market season rapidly approaching here in the NE, I sat down with W1FB's QRP Notebook and went through all the schematics to compile this parts list. This is everything that appears 3 or more times in the book, except for important stuff like chips. Buy lots of it if it has a + next to it.
So now you all can fill up your QRP junk boxes...

Transistors Amidon cores Diodes Chokes Enamel Hardware
2N2222A+ T24-43 ? 1N914+ 1mH+ Wire 6-32
2N3553 T37-6+ 22uH+ #18 4-40
2N3866 T50-2+ Zeners 15uH #20
2N3904+ T50-6+ 6.8V 10uH #24
2N4400+ T68-2+ 9.1V #26
2N4401+ T68-6 15V #28
2N4403+ FT37-43+ 33V #30
2N4416+ FT50-43+ 56V (0.4 & 1W)
2N5179+ FT50-63
MPF102+ BLN43-202
40673 (NTE222) Bead, 850mu

Chips Op Amps Pots Mini Air Ceramic or
CA3028 (RCA) 741 100k+ Variable Mica Trimmer
CA3046 747 10k+ 15 5 50
LM386 (Natl) TL081 (TI) 1k 25 10 60+
LM723 50 15 100+
MC1350P (Moto) 100+ 25 300
MC1496G 150
MC3346P
MWA110
NE555 (Sig)
NE602
uPC1651G (NEC)

Disk Ceramic NP0 Electrolytic Polystyrene
22 100+ 0.001++ (102) 22 100+ or Tantulum 220
27 130 0.005 (502) 27 130 1+ 560
33 150+ 0.01++ (103) 47+ 150 2.2+ 1000
47+ 220 0.1++ (104) 56+ 220 4.7 1500
56+ 470 68 10+ 2000
68+ 680 22+ (16 & 25V) 2200+
220 10000
15000
Resistors (1/4 & 1/2w, comp or film)
10+ 100++ 1.0k++ 10k++ 100k++ Silver Mica
15 150 1.5k+ 12k 220k+ 130 390
22 180+ 2.2k+ 15k 470k+ 150+ 470

33+ 220 2.7k 22k+ 180+ 560
47+ 270+ 3.3k+ 27k+ 220 750
56+ 390 3.9k 33k 240 1000
470+ 4.7k+ 47k+ 270+ 1200
560+ 5.6k+ 56k+ 330

-Tom R. N1OOQ randolph@est.enet.dec.com

305. Re: Project #15: A Spark-Gap Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 21:14:14 UTC
From: dick@kanga.demon.co.uk
Message-ID: <760742054snz@kanga.demon.co.uk>
Source record: 118595

HI what is the "boatanchors" group?
Info appreciated
73 de Dick

306. Re: 2m/70cm linear - circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 21:45:04 UTC
From: mack@ncifcrf.gov
Message-ID: <CKxDr4.JJ6@ncifcrf.gov>
Source record: 118596

In article <patrick_tatro.17.7C558180@stortek.com> patrick_tatro@stortek.com (Patrick Tatro) writes:
>In article <CKwzMz.9Ks@ncifcrf.gov> mack@ncifcrf.gov (Joe Mack) writes:
>>From: mack@ncifcrf.gov (Joe Mack)
>>Subject: Re: 2m/70cm linear - circuit wanted
>>Keywords: Kits
>>Date: Tue, 8 Feb 1994 16:40:11 GMT
>

>>12V and do they have the R/R relays for this price.?
>> Joe Mack NA3T
>> mack@ncifcrf.gov
>Joe
> The kit I built was 12V - I don't know what you mean by R/R relays - The
>amp was a mono bander - It was real easy to assemble - It took abt 5 hours to
>assemble and 1 hour to tune the SWR's . If you need more info contact
>Communication Concepts Inc.
>508 Millstone Drive
>Beavercreek, Ohio
> 45434-5840
>
>ph 513-426-8600
>
>73's
>Patrick Tatro N0WCG
>
>
>
Sorry that was T/R relays (I didn't see it till the next round). I just called them - Their UHF amp is 28V, but they are hoping to have one for 12V by Dayton. I think their VHF amp used to be 28V, but now it's 12V. I'll keep me eyes out. Thanks for the tip.

Joe NA3T
mack@ncifcrf.gov

307. Re: QRP shopping list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-08 23:16:12 UTC
From: myers@pongo.West.Sun.COM
Message-ID: <2j96fsINNgq1@abyss.West.Sun.COM>
Source record: 118597

In article <CKx8tG.K85@ryn.mro.dec.com> randolph@est.enet.dec.com (Tom Randolph) writes:
>
>With flea market season rapidly approaching here in the NE, I sat down with
>W1FB's QRP Notebook and went through all the schematics to compile this parts
>list. This is everything that appears 3 or more times in the book, except for
>important stuff like chips. Buy lots of it if it has a + next to it.
>So now you all can fill up your QRP junk boxes...
>
>Transistors
[...]
>2N4416+
[...]
>MPF102+

These are essenitally the same transistor, at least as far as QRP projects
go. I stocked up on J310s from Hamilton/Hallmark, which is at least as
good as the 2N4416/MPF102, for $.34/ea brand-new.

--
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

308. Re: spot my transistor.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 05:12:51 UTC
From: tgm@netcom.com
Message-ID: <tgmCKxyHG.31u@netcom.com>
Source record: 118598

antonio gatta (st92ba44@dunx1.ocs.drexel.edu) wrote:
: the most convenient place for me to get such pieces is at a local
: radio shack. ..the catalog has alot of transistors...all marked either NPN
: or PNP. i haven't spotted a HEP 232 (?). which one do i need? it gives
: no voltage specs or anything. can i use just any old NPN? any help would
: be appreciated. thanks.

The HEP line was made by Motorola and I believe HEP means "Hobbyist
and Experimenters Parts". My NTE book says it is equivalent to an
NTE 121 a PNP power transistor in a TO-3 case, 30v c-e, 100 watts.
It is also germanium. The closest radio shack equivalent would
be a part # 276-2043. You might have to twiddle with the biasing slightly
because the RS part is silicon. Generally transistors for this sort
of application are pretty non-critical as long as you have the
approximate power dissipation and collector voltage.

Thomas -- KI4N

309. Re: Securing VXO coils, what glue?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 05:20:00 UTC
From: tgm@netcom.com
Message-ID: <tgmCKxytD.3sD@netcom.com>
Source record: 118599
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

asirene@ntuvax.ntu.ac.sg wrote:
: I am winding some coils for a VXO and want to know if
: the "glue-gun" melted plastic is suitable for securing the coil
: or if it is too lossy?

The classic solution is Q-dope made by dissolving polystyrene
in a solvent. Polystyrene is plentiful but I can't remember
the proper solvent. I made a gooey useless mess once when I
used a less than optimal solvent. Acetone should work.

Thomas

310. Help...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 14:21:27 UTC
From: jeffrey_p_wendt@jplpost.jpl.nasa.gov
Message-ID: <jeffrey_p_wendt.12.000E5BF4@jplpost.jpl.nasa.gov>
Source record: 118603

I would like to modify my Micor radio (VHF) to act as a mobile inband repeater, to extend the range of my HT's when out in the field. I know very little about this type of modification, and any help re: circuits, duplexers, or just another angle that I havn't thought of, would be a great help.

Thanks in advance,

JPW

311. Re: QRP shopping list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 19:17:21 UTC
From: royle@tekig6.PEN.TEK.COM
Message-ID: <13644@tekig7.PEN.TEK.COM>
Source record: 118600

myers@pongo.West.Sun.COM (Dana Myers):
>>
>>Transistors
>[...]
>>2N4416+
>[...]
>>MPF102+

>These are essenitally the same transistor, at least as far as QRP projects
>go. . .

Although usually true, there are a couple of common applications where substituting an MPF102 for a 2N4416 might cause a problem. These JFETs are commonly used as an oscillator, either Harley or Colpitts. In these simple oscillators, the oscillator output amplitude is directly related to the individual device's pinchoff voltage. The MPF102 has much looser specifications, so in some cases will deliver too small (or large) a signal when used in one of these oscillators in place of a 2N4416. Of course, you can make up the difference in a following stage if it's a one-off design or you're willing to put in an adjustment.

The other application where you might have a problem is using the MPF102 for a common-gate RF amplifier. A typical application runs the JFET at Idss and couples the signal in through a 1:4 impedance ratio transformer. With the 2N4416, this will result in an input SWR of 1.5 or less; the MPF102 can present a mismatch as high as 2.5:1 because of its looser specs. This may not cause a problem, but it could reduce stage gain. Or if the common-base stage follows a filter, it could result in degraded filter performance.

You can always substitute a 2N4416 for an MPF102 (unless the metal case on the former causes a problem), and except for the two applications above, the reverse substitution is usually ok too.

73,
Roy Lewallen, W7EL
roy.w.lewallen@tek.com (new address - the old one still works, too)

312. Re: BALUN FOR 2-M YAGI

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 20:49:59 UTC
From: ornitz@kodak.rdcs.kodak.com
Message-ID: <1994Feb9.204959.12081@kodak.rdcs.kodak.com>
Source record: 118601
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <2j64ii$5ip@granny.mdd.comm.mot.com> shane@mdd.comm.mot.com (Hugh Shane N7UAX) writes:
>Can anyone suggest a design for matching a 50-ohm coax feed to a six beam,
>2 meter Yagi. The balun designs I've seen all seem to be restricted to
>frequencies less than 100MHz. There must be a classic technique, I just
>can't find it!

The classic VHF balun technique is the quarter-wave sleeve balun. In old days these were often called beer-can baluns, so named because steel beer cans were soldered together to form the outer sleeve. KLM and a few other companies sold these commercially but they are easy to build with copper tubing and pipe. Design information can often be found in the older ARRL VHF manuals. 73
Barry WA4VZQ


```
-----------------
| ___ ________ | Dr. Barry L. Ornitz WA4VZQ
| | / / | | Eastman Chemical Company
| | / / | | ECC Research Laboratories, Engineering Research Div.
| |< < K O D A K| | Process Instrumentation Research Laboratory
| | \ \ | | P. O. Box 1972, Building 167B
| |__\ \________| | Kingsport, TN 37662 (615/229-4904, FAX 615/229-4558)
| | INTERNET: ornitz@kodak.com
-----------------
```


Eastman Chemical Company is no longer a part of Kodak, now being an independent company. Kodak is letting us use her Internet connection until we get our own.

313. Re: QRP shopping list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-09 21:57:26 UTC
From: myers@cypress.West.Sun.COM
Message-ID: <2jbm86INNh5f@abyss.West.Sun.COM>
Source record: 118602

In article 13644@tekig7.PEN.TEK.COM, royle@tekig6.PEN.TEK.COM (Roy W Lewallen) writes:
>
>
>myers@pongo.West.Sun.COM (Dana Myers):
>>>
>>>Transistors
>>[...]
>>>2N4416+
>>[...]
>>>MPF102+
>
>>These are essenitally the same transistor, at least as far as QRP projects
>>go. . .
>
>Although usually true, there are a couple of common applications
>where substituting an MPF102 for a 2N4416 might cause a problem. These
>JFETs are commonly used as an oscillator, either Harley or Colpitts. In
>these simple oscillators, the oscillator output amplitude is directly
>related to the individual device's pinchoff voltage. The MPF102 has much
>looser specifications, so in some cases will deliver too small (or large)
>a signal when used in one of these oscillators in place of a 2N4416. Of
>course, you can make up the difference in a following stage if it's a
>one-off design or you're willing to put in an adjustment.

There have been a few letters published in QST mentioning the device-to-device variation of the MPF102 can result in considerable performance changes. In particular, the use of the MPF102 in an oscillator is rather mentioned; you just about have to hand-select a FET out of a batch for best/correct output.

I've never really looked at it hard, but most oscillator circuits that use a JFET include a diode from the gate to ground. This obviously serves to clamp the gate voltage before the gate/source diode conducts (as long as the diode is fast enough :-)), and also will build a DC offset on the coupling capacitor from the tank circuit to the gate. This DC bias would appear to, and is said to, provide an AGC action is stabilizing the oscillator output amplitude. What comes to mind, is this action adequate to compensate for common device variations?

>The other application where you might have a problem is using the MPF102
>for a common-gate RF amplifier. A typical application runs the JFET at
>Idss and couples the signal in through a 1:4 impedance ratio transformer.
>With the 2N4416, this will result in an input SWR of 1.5 or less; the
>MPF102 can present a mismatch as high as 2.5:1 because of its looser specs.
>This may not cause a problem, but it could reduce stage gain. Or if the
>common-base stage follows a filter, it could result in degraded filter

>performance.

Yup; I always recommend using a J310 for such an application since (a)
the specs are tighter and increase chance of repeatability and (b) the
fairly high forward Gm of the J/U310 provides a pretty good match directly
to 50-75ohms.

---
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

314. Re: Aluminium

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 08:10:36 UTC
From: tgm@netcom.com
Message-ID: <tgmCL01Dq.Ito@netcom.com>
Source record: 118604

Jim Buchanan (c22jrb@kopt0002.DElcoelect.COM) wrote:
: I'm looking for a mail-order source for aluminium
: sheets to be used in making panels and cases for
: homebrew eqpt. All local sources I can find have
: minimum orders geared towards manufacturing firms.

One source is to use plain flat aluminium baking sheets such
as one would find in the dime store.

Thomas

315. Transceiver headset

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 15:29:28 UTC
From: henderdx@hamlet.uncg.edu
Message-ID: <2jdjso$av9@bruce.uncg.edu>
Source record: 118605

I have a question that is possibly a little out of place here in your news group, but for lack of a better place to post...

I'm not a HAM-ster, but I'd like to build a headset (Microphone/earphones) w/ a built in transmitter reciever for use w/ my computer. I'd like it as compact as possible. i.e. all in the head set wo/ a battery pack.

This will require at least two (three if I decide to go stereo) IC's (RS-232), plus possibly a very small pre-amp for the mic (this will depend on output levels on the mic and required input levels at the IC.)

Does anyone know where I can get a design for such a project? Or better yet, has anyone ever built that sort of thing?

Any info, hints, tips, tricks, or possible "hang-ups" would be greatly appreciated.

--

David Henderson
henderdx@hamlet.uncg.edu

316. Re: Securing VXO coils, what glue?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 15:36:56 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Feb10.153656.14274@osuunx.ucc.okstate.edu>
Source record: 118606
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <tgmCKxytD.3sD@netcom.com>,
Thomas G. McWilliams <tgm@netcom.com> wrote:
>asirene@ntuvax.ntu.ac.sg wrote:
>: I am winding some coils for a VXO and want to know if
>: the "glue-gun" melted plastic is suitable for securing the coil
>: or if it is too lossy?
>
>The classic solution is Q-dope made by dissolving polystyrene
>in a solvent. Polystyrene is plentiful but I can't remember
>the proper solvent. I made a gooey useless mess once when I
>used a less than optimal solvent. Acetone should work.

Almost anyting will disolve styrofoam except water and alcohol. Paint
thinner, gasoline, kerosene, MEK, acetone. I would try paint thinner and
if that didn't suit me I'd use gasoline second it is not much more flamable
than the rest and it is quick drying.

Gordon AB5Dg

/* Gordon Couger */
/* Biosystems & Agricultural Engineering */
/* Oklahoma State University */
/* 114 Ag Hall, Stillwater, OK 74074 */
/* gcouger@olesun.agen.okstate.edu 405-744-9763 day 624-2855 evenings */
/* I Speak only for myself and not for anyone else */

317. DDS Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 17:31:07 UTC
From: Eric_Shrader@qm.sri.com
Message-ID: <2jdr0r$84@unix.sri.com>
Source record: 118607

Does anyone have any experience building or playing with the DDS board designed by VE3JIL and published in the August '93 issue of '73? It is a parallel port controlled 0-16Mhz synthesizer. I am interested in using it in a 432 Mhz receiver which requires a couple of frequency doublings and I'm wondering if the performance of this board is equal to a VXO in terms of stability, phase noise etc.
Does anyone have any other DDS designs that are worth considering? There are many chipsets out there but most are far too expensive for this application.

ADthanksVANCE Eric, kc6spn

318. Re: QRP shopping list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 18:27:40 UTC
From: royle@tekig6.PEN.TEK.COM
Message-ID: <13668@tekig7.PEN.TEK.COM>
Source record: 118608

myers@cypress.West.Sun.COM (Dana Myers):

>I've never really looked at it hard, but most oscillator circuits that use
>a JFET include a diode from the gate to ground. This obviously serves to
>clamp the gate voltage before the gate/source diode conducts (as long as the
>diode is fast enough :-)), and also will build a DC offset on the coupling
>capacitor from the tank circuit to the gate. This DC bias would appear to,
>and is said to, provide an AGC action is stabilizing the oscillator output
>amplitude. What comes to mind, is this action adequate to compensate for
>common device variations?

No. The diode limits the positive excursion of the gate signal. Pinchoff
determines the negative excursion.

Roy Lewallen, W7EL
roy.w.lewallen@tek.com

319. Re: 100hz tone board

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 19:30:13 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470001@hpcss01.cup.hp.com>
Source record: 118609

check the back of QST, there are a couple of manufactures of nice little boards (about $50 I think), you can build a simple 100Hz osc and inject that into your input audio, it is hard to build one that doesn't drift though, a Wein Bridge osc is OK but the XTAL controlled boards are better, I'd buy one, then you can change the freq if you need to, the have little jumpers or switches to set the correct PL,

the 100Hz needs to be abouut +/- 1 Hz, people on the air can help you set the deviation level.

good luck

320. Glue v wax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-10 20:57:59 UTC
From: dick@kanga.demon.co.uk
Message-ID: <760913879snz@kanga.demon.co.uk>
Source record: 118610

Hi all,
Reading the info regarding using glue for VFOs.
I was horrified !!!!
get some beeswax..... Melt it over the CCT
it will provide total stability and provide
physical stability.
Oh for more bees....
73 de Dick

321. MAKING COILS FOR HF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 00:27:50 UTC
From: drew@trl.oz.au
Message-ID: <drew.108.0@trl.oz.au>
Source record: 118611

For possible interest (recently published in our local journal "Amateur Radio":-

MAKING AIR-WOUND COILS FOR HF Drew Diamond, VK3XU

We have all admired those photographs of antenna couplers and power amplifiers with Air-Dux (TM) or B&W (TM) air-wound coils. By using the minimum amount of former for support material, they look, and are, efficient. Not many years ago, we could order AusWe have all admired those photographs of antenna couplers and power amplifiers with Air-Dux (TM) or B&W (TM) air-wound coils. By using the minimum amount of former for support material, they look, and are, efficient. Not many years ago, we could order Aust

ralian made equivalents from the William Willis Co., but sadly, no longer trading. At time of writing, there is no known local supplier. They may be ordered from overseas, although the landed cost can be rather high.

For larger coils of perhaps 10 turns of 12 gauge wire, a perspex rectangle may be drilled with the number of holes necessary to accommodate the helix. The coil is wound onto a slightly undersized mandrel, then removed, and threaded or 'screwed' onto the fFor larger coils of perhaps 10 turns of 12 gauge wire, a perspex rectangle may be drilled with the number of holes necessary to accommodate the helix. The coil is wound onto a slightly undersized mandrel, then removed, and threaded or 'screwed' onto the fo

rmer (see Ref. 1). However, when a larger inductance involving tens of turns of smaller gauge wire is required, this technique is rather awkward and time consuming, and the results are not always as good as one would wish.

Here is a method that allows the home brewer to fabricate high-Q coils to requirements. The coil is supported upon a rectangle of perspex, or other low-loss material, such as fibre-glass circuit board- copper removed. Rather than have the turns running thHere is a method that allows the home brewer to fabricate high-Q coils to requirements. The coil is supported upon a rectangle of perspex, or other low-loss material, such as fibre-glass circuit board- copper removed. Rather than have the turns running thr

ough holes, they are fixed upon a rack or comb cut along each edge of the former. In the example shown, we make a near equivalent to the B&W type 3022, which is a 20 uH coil of 40 turns of number 16 B&S, 8 turns per inch, 1.75 inches diameter. A templaterough holes, they are fixed upon a rack or comb cut along each edge of the former. In the example shown, we make a near equivalent to the B&W type 3022, which is a 20 uH coil of 40 turns of number 16 B&S, 8 turns per inch, 1.75 inches diameter. A template i

s recommended if you plan to make more than one coil of a specific diameter. Use brass sheet if you can get it, otherwise steel, about 18 gauge. Carefully, and as accurately as you can, mark out the cutting points for the two racks. A black felt-tip pen is recommended if you plan to make more than one coil of a specific diameter. Use brass sheet if you can get it, otherwise steel, about 18 gauge. Carefully, and as accurately as you can, mark out the cutting points for the two racks. A black felt-tip pen ma

kes a good background medium for marking out. Remember to offset one rack by exactly one half of the pitch. In this example the pitch is 8 t.p.i., so the offset must be 1/16".

A hack-saw frame fitted with one or two blades, according to wire size, or better still, an Abrafile rod-saw (available from engineer's tool suppliers, comes with three blades and clips to suit an ordinary hacksaw) may be used to cut the rack. Take your tA hack-saw frame fitted with one or two blades, according to wire size, or better still, an Abrafile rod-saw (available from engineer's tool suppliers, comes with three blades and clips to suit an ordinary hacksaw) may be used to cut the rack. Take your ti

me, and cut each slot to exactly the same depth, as evenly spaced as possible. Clean up burrs with a smooth file. Cut a rectangle of perspex to size, then sandwich perspex and template together. Fix in place with two small G-clamps (cramps?). Mount the wime, and cut each slot to exactly the same depth, as evenly spaced as possible. Clean up burrs with a smooth file. Cut a rectangle of perspex to size, then sandwich perspex and template together. Fix in place with two small G-clamps (cramps?). Mount the wor

k in a vice, and carefully cut each rack into the perspex.

Cut a length of suitably sized quad timber (90 degrees worth of round stuff) into four equal pieces, slightly longer than the planned coil length. Plane a small bevel along each edge. From thin plywood, make a pair of spacers to fit between the quads. TheCut a length of suitably sized quad timber (90 degrees worth of round stuff) into four equal pieces, slightly longer than the planned coil length. Plane a small bevel along each edge. From thin plywood, make a pair of spacers to fit between the quads. The

spacers should be about an inch longer to provide a 'handle' and so allow you to remove them when the coil is wound. Rub a little linseed oil into these parts to make them more slippery.

When you are ready to wind the coil, position the four quads and their spacers onto the perspex former, then temporarily wrap a length of tape around the assembly to hold the job intact, in order to receive the coil. Roughly calculate the length of wire rWhen you are ready to wind the coil, position the four quads and their spacers onto the perspex former, then temporarily wrap a length of tape around the assembly to hold the job intact, in order to receive the coil. Roughly calculate the length of wire re

quired. In the example above it will be pi times the coil diameter times the number of turns; 3.14 X 1.75 X 40 = 220 inches. Unwind say, 240 inches (20') of wire and clamp the spool in your vice. With a suitable tool, grip the far end of the wire and giequired. In the example above it will be pi times the coil diameter times the number of turns; 3.14 X 1.75 X 40 = 220 inches. Unwind say, 240 inches (20') of wire and clamp the spool in your vice. With a suitable tool, grip the far end of the wire and give

it a firm stretch to remove any small wrinkles. The ends of the winding must be anchored by passing the wire through a hole, or simply by bending the wire into a U, and seating it firmly down into a spare tooth for the purpose. Whilst maintaining tensive it a firm stretch to remove any small wrinkles. The ends of the winding must be anchored by passing the wire through a hole, or simply by bending the wire into a U, and seating it firmly down into a spare tooth for the purpose. Whilst maintaining tension

on the wire, wind the coil onto the former by walking towards the vice. Remember to observe the winding sense. Make sure the wire seats nicely down into each tooth of the rack. When a few turns have been wound on, you can remove the tape; and complete on on the wire, wind

the coil onto the former by walking towards the vice. Remember to observe the winding sense. Make sure the wire seats nicely down into each tooth of the rack. When a few turns have been wound on, you can remove the tape; and complete the

winding. Apply a narrow fillet of epoxy glue along the two racks to cement the winding in position. Take care that no glue finds its way onto the quad (the bevel on each of the quads should dodge this problem). Immediately hang the assembly in the verthe winding. Apply a narrow fillet of epoxy glue along the two racks to cement the winding in position. Take care that no glue finds its way onto the quad (the bevel on each of the quads should dodge this problem). Immediately hang the assembly in the vertical

position. Finally, when the glue has set, grip the spacers in a vice and carefully pull one out, then the other.

If taps are required, form a spade on the tapping wire by flattening the end with a hammer. With pointed long-nose pliers, bend a loop in the spade to match the coil wire diameter. The wire may now be hooked and soldered onto the coil at the requisite spoIf taps are required, form a spade on the tapping wire by flattening the end with a hammer. With pointed long-nose pliers, bend a loop in the spade to match the coil wire diameter. The wire may now be hooked and soldered onto the coil at the requisite spot

without risk of shorting adjacent turns (Ref. 2).

The enamelled wire coil shown in the example has a measured Q of 350 at the 2.5 MHz test frequency. Unless it is done properly, silver plating the coil wire has little benefit, and may actually increase coil losses (Ref 3). Plain, enamelled or tinned coppThe enamelled wire coil shown in the example has a measured Q of 350 at the 2.5 MHz test frequency. Unless it is done properly, silver plating the coil wire has little benefit, and may actually increase coil losses (Ref 3). Plain, enamelled or tinned coppe

r is entirely satisfactory for amateur applications. Wire of 12, 16 or 18 B&S may be obtained from wire & insulation merchants, auto electricians and some electronics suppliers. Ordinary single-strand electrician's wire, stripped of insulation, or 'junkeer is entirely satisfactory for amateur applications. Wire of 12, 16 or 18 B&S may be obtained from wire & insulation merchants, auto electricians and some electronics suppliers. Ordinary single-strand electrician's wire, stripped of insulation, or 'junked-

but-good' power transformers are also a good source.

References

1. Radio Communication Handbook; RSGB, 4th edition, P13.36.
2. Tapping Air-wound Coils; Technical Topics, Rad Comm, May '93.
3. RF Performance of Electroplated Conductors; Fowler, A.M., Electronics Australia July 1970.
4. Constructing Air-wound Coils; Johnson, W7KBE, Ham Radio (USA), Aug. '84.

322. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 01:08:19 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb11.010819.3376@ke4zv.atl.ga.us>
Source record: 118612

In article <CKvBKr.HMn@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>Actually, in a sense, there are a whole lot of them: as
>VCO's in PLLs in things like handhelds. As someone else
>pointed out, they aren't particularly temp stable, but a
>bit of feedback can solve that problem. And you can
>frequency or phase lock them quite easily: frequency
>locking is especially easy, since if you assume that the
>VCO won't drift too much in a single count period (say
>1/10 second), you only have to keep track of the least
>significant bits to get enough info for a correction.
>Continuing the example, 4 bits of count could correct
>+/- 70Hz each 1/10 second, and if you feed the correction
>into an integrator, it will track. If you have a drift
>that large, you probably need to work on the open-loop
>characteristics anyway, before closing the loop. Anyway,
>the result would be a 10Hz reference, a 4 bit counter,
>a 4 bit latch to save the "desired", a 4 bit adder
>(actually subtracter) to find the error, a 4 bit DAC
>(4 resistors driven from the CMOS output of the adder),
>and an integrator. You could put all that in a FPGA
>(including the reference generator and timing stuff)
>pretty trivially. But you can also do it with common
>parts that have been available since the late '60's...

Hmmm, this scheme would allow analog tuning that "snaps"
to 10 Hz increments with the long term drift characteristics
of a crystal reference. Neat.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

323. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 03:48:37 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2jev6l$mak@usenet.INS.CWRU.Edu>
Source record: 118613

In article <CKvBKr.HMn@hpcvsnz.cv.hp.com>, Tom Bruhns <tomb@lsid.hp.com> wrote:
>Continuing the example, 4 bits of count could correct
>+/- 70Hz each 1/10 second, and if you feed the correction
>into an integrator, it will track.

Neat! One of those Microchip PICs could do the job nicely, replacing the adder and 10 Hz reference. (Software timing loops could do the job.)

Are there any other clever ways to reduce this scheme to fewer off-the-shelf components?

Stephen

--
Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

324. Re: Transceiver headset

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 05:29:46 UTC
From: barnaby@world.std.com
Message-ID: <CL1oLn.8J1@world.std.com>
Source record: 118614

henderdx@hamlet.uncg.edu (David Henderson) writes:

>I have a question that is possibly a little out of place here in your
>news group, but for lack of a better place to post...

>I'm not a HAM-ster, but I'd like to build a headset
>(Microphone/earphones) w/ a built in transmitter reciever for use w/ my
>computer. I'd like it as compact as possible. i.e. all in the head set
>wo/ a battery pack.
David,
I didn't build one of these, but did "hook together" some parts for a
similar project. I wanted to have hands free operation at my computer
while talking on the phone. I tried all headsets I could find (Hello
Direct, Plantronics, etc, etc) but was disappointed with the quality, and
needed more noise cancellation (I enjoy being in my own world).
I finally got a Peltor Helicopter Headset hooked it up to a small
amplifier (from Plantronics) and a small impedence match for the
microphone, and I am happy! Not to mention 27dB noise reduction!
I look like "geek-of-the-week" at my desk, but hey!
Barnaby barnaby@world.std.com (AA1IB)

325. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 14:50:23 UTC
From: elendir@enst.fr
Message-ID: <2jg5vf$i82@cismsun.univ-lyon1.fr>
Source record: 118615

Tom Bruhns (tomb@lsid.hp.com) wrote:
: Greg Bullough (greg@netcom.com) wrote:

: : I've seen a few examples of varactor-tuned VFOs (not VXO's)
: : in various pubs from time to time. They've always, though,
: : been used in receivers... ...I can't recall seeing one
: : used as the basis for a QRP transmitter.

: Continuing the example, 4 bits of count could correct
: +/- 70Hz each 1/10 second, and if you feed the correction
: into an integrator, it will track. If you have a drift

It isn't that simple. You must design the integrator very carefully in
order to do so, and insure that the setting time of the VCO is under the
1/10 limit. And then, take care that there is no oscillations.
For this kind of application, you need a third order low-pass integrator,
because a second order won't follow the correction speed.

Vince (10.5 weeks and waiting...)

326. Re: DDS Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 14:59:45 UTC
From: jjw@seastar.org
Message-ID: <CL2Ezn.24B@seastar.org>
Source record: 118616

As quoted from <2jdr0r$84@unix.sri.com> by Eric_Shrader@qm.sri.com:

> Does anyone have any experience building or playing with the DDS board
> designed by VE3JIL and published in the August '93 issue of '73? It is a
> parallel port controlled 0-16Mhz synthesizer. I am interested in using it
> in a 432 Mhz receiver which requires a couple of frequency doublings and
> I'm wondering if the performance of this board is equal to a VXO in terms
> of stability, phase noise etc.
> Does anyone have any other DDS designs that are worth considering? There
> are many chipsets out there but most are far too expensive for this
> application.
>
> ADthanksVANCE Eric, kc6spn

<warning: I got paid for the articles mentioned in the
following. Not well, not enough to cover shipping and phone calls,
but I *did* get paid...>
No, I have not built that DDS, though I suspect it will work
out poorly (as would most DDSs). The problem would be phase jitter,
and it would get worse with multiplication. A possibly better
approach would be to use a crystal oscillator for the multiplication,
and mix with a DDS as the VFO. This gets you up where you want
cheaply, and gives you the fine-tuning and wide coverage that you need
up at 432MHz (it's a big band :-).
As for other DDSs... In December 92, January 93, February 94
and March 94 of 73 magazine, there were various parts of a DDS (the
VFO, a pitiful excuse for an amplifier (guilty as charged 1/2 :-), a
diode programmed board, a parallel-port programmed board and a
thumbwheel-switch board). It is based on the Qualcom Q2220 chip,
using a Harris CA3338[A]E DAC, and it runs from just above DC to
21.5MHz in 3-ish Hertz steps (10-ish if you use the thumbwheels). It
is designed as a bunch of building blocks, so you can change parts as
you want, with receiver, SSB, microcontroller (and a better amplifier)
to follow as I (or anybody else) get them designed & tested.
There are people selling various kits for these articles (I'm
NOT one, and I get no $$$ from any of them, so this is not an
advertisement...), and they are (relatively) cheap (around ₰100 for
the VFO, $80 for the thumbwheels, $??? for the parallel port (don't
buy the amp, skip the diodes unless you are *really*
cheap). It is spectrally clean enough for HF QRP regulations (QRO if
you stay below about 10MHz), and it is not only a good, stable VFO but
a pretty handy signal generator (need a 700hz tone? a 3kHz tone? Make
a dc receiver for 17 meters? Sweep a crystal filter?).
There have been other DDS articles in ham-ish publications.
There was one many years ago in QST (dunno much more about it), one

using TTL chips in Radio Electronics (covered up to 512kHz in 1hZ
steps, dip switch programmed) and the ones in 73. Lots of theory and
explaination articles in real radio magazines, but not a lot of
how-to-build-it articles there.
--
When I die, they'll bury me John Welch, N9JZW
in the Tomb of the Unknown Hacker. jjw@seastar.org

327. Re: Glue v wax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 16:08:03 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CL2I5G.3A9@hpqmoea.sqf.hp.com>
Source record: 118617

Dick G0BPS (dick@kanga.demon.co.uk) wrote:
: Hi all,
: Reading the info regarding using glue for VFOs.
: I was horrified !!!!
: get some beeswax..... Melt it over the CCT
: it will provide total stability and provide
: physical stability.
: Oh for more bees....
: 73 de Dick

Start collecting ear-wax now ! in case you want to build a hifi
tuner !

Cheers
David

328. Re: Aluminium

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 19:22:50 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Feb11.192250.1798@osuunx.ucc.okstate.edu>
Source record: 118618

In article <tgmCL01Dq.Ito@netcom.com>,
Thomas G. McWilliams <tgm@netcom.com> wrote:
>Jim Buchanan (c22jrb@kopt0002.DElcoelect.COM) wrote:
>: I'm looking for a mail-order source for aluminium
>: sheets to be used in making panels and cases for
>: homebrew eqpt. All local sources I can find have
>: minimum orders geared towards manufacturing firms.

Junk yards often have surplus aluminium and odd size
peices. Watch for hardened Al sheet it breaks insted
of bending. It can be annealed by heat.

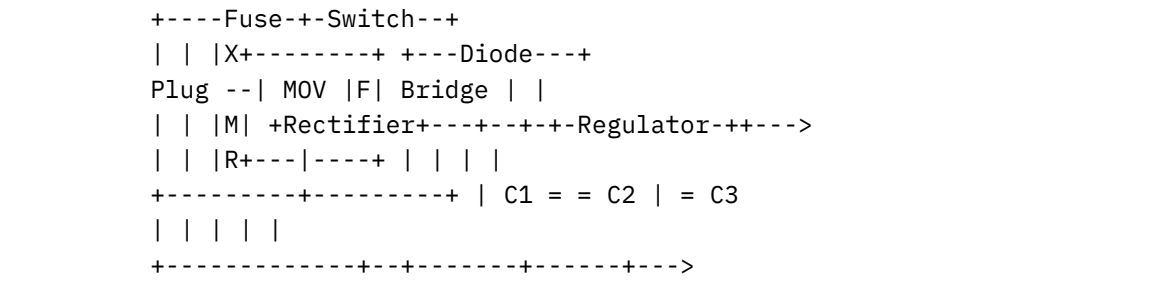
Also try to find out who the local sources are selling
to. And buy their scrap.

Gordon AB5Dg

329. Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 20:02:37 UTC
From: cravitma@cps.msu.edu
Message-ID: <2jgo8t$17cu@msuinfo.cl.msu.edu>
Source record: 118619

I am trying to design a regulated 12V power supply (to power my HT at home) and need advice on the following (since it's been a long time since I have designed P.S's and am going from memory). Here is the circuit I have so far:



The secondary of the transformer is going to be around 14V 1.5 A, and the regulator will be a 7812.

My questions are:

1) Have I overlooked anything electrical-wise or safety-wise in the circuit? As I said, it's been a couple of years since I designed a P.S. and I was going from memory here.

2) What are the values of C1, C2 and C3? (Capacitor type, capacitance and voltage ratings)

3) Can the 7812 handle 1.5 - 2 A of current? If not, is there another fixed 12V regulator I can use (I don't want to use an adjustable regulator for reasons of cost and simplicity of circuit design)

If anyone can provide comments, suggestions, criticisms, pointers to references, etc, I would greatly appreciate it.

/Matthew N9VWG

--
Matthew Cravit, N9VWG | All opinions expressed here are
Michigan State University | my own. I don't speak for Michigan
East Lansing, MI 48825 | State, and they don't speak for me
E-Mail: cravitma@cps.msu.edu | (thank goodness).

330. Help: I need a Z8 compiler!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 20:03:07 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <52973@uugate.wa7slg.ampr.org>
Source record: 118620

Yes, I need a Z8 compiler! (Not a Z80... I have several of those...)

I already have one called "UASM" by Custom Computer Consultants (circa 4/86)
but it is non-standard and buggy...

Does anyone have any other suggestion?

(Before I get any "Why are you using a Z8, anyway?" comments, I might mention
that I have a dozen or so complete Z8 microcontrollers with DTMF encoders/decode
rs that are waiting to be used in a ham project...)

Thanks,

<Clint>

Internet: ka7oei@uugate.wa7slg.ampr.org
MSYS: ka7oei@wb7esh.ut.usa.na (ack!)

331. Re: 100hz tone board

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 20:49:43 UTC
From: mac20@bonjour.cc.columbia.edu
Message-ID: <2jgr17$17n@apakabar.cc.columbia.edu>
Source record: 118621

Acutally i missed the beginning of this thread but concerning PL Tones, is there a simple chip or method that will decode PLs? I know there's the chip for DTMF from SSI but i'm wondering if there is something for sub-audiable also.

Mike KF2NV

332. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 23:15:33 UTC
From: greg@netcom.com
Message-ID: <gregCL31xy.223@netcom.com>
Source record: 118622

In article <2jev6l$mak@usenet.INS.CWRU.Edu> trier@odin.ins.cwru.edu (Stephen C. Trier) writes:
>In article <CKvBKr.HMn@hpcvsnz.cv.hp.com>, Tom Bruhns <tomb@lsid.hp.com> wrote:
>>Continuing the example, 4 bits of count could correct
>>+/- 70Hz each 1/10 second, and if you feed the correction
>>into an integrator, it will track.
>
>Neat! One of those Microchip PICs could do the job nicely, replacing
>the adder and 10 Hz reference. (Software timing loops could do the
>job.)
>
>Are there any other clever ways to reduce this scheme to fewer off-the-
>shelf components?
>
Precisely what I was getting at in starting this thread. One thing that drives me bonkers about so many QRP designs is the XTAL control. A good, versatile, inexpensive VFO would be a godsend. I'm an experienced QRP type, but have rarely been rock-bound (Argonaut, you know), and I think I find crystal control a lot more limiting than low power.

However, the field of simple VFOs seems a bit neglected by the simple circuit gods.

I thought towards varacter tuning because they, and 10-turn pots, are a lot more obtainable than decent variable caps.

Greg

333. code practice oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-11 23:58:24 UTC
From: abel@vax.sonoma.edu
Message-ID: <1994Feb11.155824.1@vax.sonoma.edu>
Source record: 118623

Well, we had the simplest xmitter thread, so I thought I would start a simplest code practice oscillator thread. I (and maybe some of my kids) are thinking about getting a ticket, and I'd just as soon not go the no-code tech road (couldn't tell you why though). Seems like I saw a circuit with six components: key, speaker, battery, transistor, resistor and capacitor. I think I even built it, though that was two decades ago. Every circuit I've seen recently, though, had more components and was fairly generic (few component values). I have an old TV, which has everything except the key and battery (which I have). Who's got a circuit?

334. Computer controled Icom 735

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-12 06:25:25 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Feb12.062525.18546@osuunx.ucc.okstate.edu>
Source record: 118624

I want to control my Icom 735 with an msdos computer. I have Phil Karn's KA9q functions in C. But I can't find the first part of the 2 files to see how he made his contctions from the printer port to the Icom.

Anybody know how this works????

Thanks
Gordon AB5Dg

335. Re: Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-12 17:13:54 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb12.171354.5054@ke4zv.atl.ga.us>
Source record: 118625

In article <2jgo8t$17cu@msuinfo.cl.msu.edu> cravitma@cps.msu.edu (Matthew B Cravit) writes:
>
> 3) Can the 7812 handle 1.5 - 2 A of current? If not, is there
> another fixed 12V regulator I can use (I don't want to use an
> adjustable regulator for reasons of cost and simplicity of
> circuit design)

The standard 7812 can't handle that much current, it's rated at 1.5A max, but there are "high current" versions that can handle up to 5 amps. They're usually the ones in the TO-3 cases and have the 'K' suffix on their part numbers.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

336. Antenna help..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 06:25:25 UTC
From: wolfman@p-cove.UUCP
Message-ID: <3caoHc1w165w@p-cove.UUCP>
Source record: 118626
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I want to attempt to build my own 2m vertical.. I have never built one
before, so I would like any suggestions ideas, plans, or design ideas
that any of you would have. I would like one that has a high gain if it's
possible.
I would also like to know if it's possible to use a vertical antenna for
making contacts with the Mir space station, the shuttle, or other sats
that use fm/packet..

Thanks..

73 de Aaron
KB8PFZ

---

wolfman@p-cove.uucp (Aaron Smith)
Amateur radio station KB8PFZ

337. A few more (different) questions!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 06:59:20 UTC
From: fsrla@aurora.alaska.edu
Message-ID: <1994Feb12.215920.1@aurora.alaska.edu>
Source record: 118627

Yep, another post.....but this one is of
a different nature, though it is MORE
questions......sigh.....

1. What exactly is a varactor diode??? What
does it do? Where do I go about purchasing them?
I can't find any in the catalogs I have.

2. Are enameled wire and insulated wire the same thing?

3. In relation to number 2 up there....when wireing your
own toriods, is wire size, and insulation incredibly important?
It seems like they would be, but a friend of mine said that
as long as the wire size is close to what it says, than it would
be fine.

Anyway, thanks AGAIN!!!!!!

FSRLA@AURORA.ALASKA.EDU
Roger Asbury
---

338. Re: DDS Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 16:27:11 UTC
From: norman@pagesat.com
Message-ID: <norman.761156831@pagesat.com>
Source record: 118628

jjw@seastar.org (John Welch) writes:

>As quoted from <2jdr0r$84@unix.sri.com> by Eric_Shrader@qm.sri.com:

>> Does anyone have any experience building or playing with the DDS board
>> designed by VE3JIL and published in the August '93 issue of '73? It is a
>> parallel port controlled 0-16Mhz synthesizer. I am interested in using it
>> in a 432 Mhz receiver which requires a couple of frequency doublings and

The secret of the year seems to be the Analog Devices AD7008 DDS with on
chip DAC. This unit will provide 32 bit tuning resolution and a 10
bit DAC. Included are registers for AM an Phase modulation. All this
in a 44 pin plcc package.

Norman

--
For information regarding Pagesat's Satellite delivered usenet news
mail info request to "pagesat@pagesat.net" or call: 415-424-0384
.. Delivering 45+ megabytes of Usenet news each day via satellite
==Now for software for Windows==18"receive Antenna =======

339. Re: Question about Super Dual-Band J-Pole

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 17:48:59 UTC
From: djohnson@acpub.duke.edu
Message-ID: <2jlp6b$9vd@news.duke.edu>
Source record: 118629

I built the antenna from last Apr 73, and it seems to
work well on 2m, but it didn't do as well as an HT with
a whip ant on 440. What's up?

SWR is in OK range, less than about 1.5:1, on 440.

A more pointed question is:

Should I expect to be able to improve the performance
on 440 by experimenting with the positions of the
feedline taps near the base of the antenna?

This is my 1st j-pole. BTW, the tests of performance
were done using several local repeaters, and with the
j-pole mounted about 25 ft above ground, as compared to
results from the same rf source, an Alinco 560 ht, using
a whip ant mounted on the ht and operating from the 1st
floor in the house. I'm not sure what design the whip was;
it was my friend's flexible, fixed ant of about 14 inch
length.

This was disappointing performance on 440 !
Was I hoping for too much?
I thought that the gain should be even higher on 440 than
on 2m, NO ?

Sorry for not posting with the exact same thread name;
this is my 1st post ever on i-net - still learning to use
the reader!

Thanks for any and all input!
72, Dave WA4NID.

340. Re: A few more (different) questions!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 19:56:37 UTC
From: kbrune@vern.bga.com
Message-ID: <2jm0lm$c2c@giga.bga.com>
Source record: 118630

fsrla@aurora.alaska.edu wrote:
: Yep, another post.....but this one is of
: a different nature, though it is MORE
: questions......sigh.....

Hey how is it going up there in Ak. I grad from UAF in 92
What dept. are you in?

: 1. What exactly is a varactor diode??? What
: does it do? Where do I go about purchasing them?
: I can't find any in the catalogs I have.

varactor diode- variable reactance, this type of diode when reversed biased changes capacitance when a voltage is applied. These diodes are use for many thing, one application is a voltage controlled oscillator another is frequency modulation. Pretty handy parts..check out the ARRL handbook. professor Merrit up there at the EE dept has a few copies.
Motorola has many types of diodes you can probably get a sample from them, Newark or digikey should sell them but I think they both have $25 limits on there orders.
: 2. Are enameled wire and insulated wire the same thing?
enameled wire has enamel on it usualy a clear coating of enamel that you can scratch off with a knife. I have used this for winding RF chokes etc..

: 3. In relation to number 2 up there....when wireing your
: own toriods, is wire size, and insulation incredibly important?
: It seems like they would be, but a friend of mine said that
: as long as the wire size is close to what it says, than it would
: be fine.
Ya, close enough. you can get enameled wire at Radio Shack there on Cushman street. More importantly you should check that the toriod is made of the proper material, iron powder or ferrite. Make sure you don't saturate the core. The core materials are highly frequency dependant. Make sure your wire is large enough for the current you want to use.

: Anyway, thanks AGAIN!!!!!!
: --
: FSRLA@AURORA.ALASKA.EDU
: Roger Asbury
: ---------------------------------
hope I have been of some help, Ken Brune WL7IR EX UAF student..

341. Re: Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-13 20:24:11 UTC
From: mjsilva@ted.win.NET
Message-ID: <37@ted.win.net>
Source record: 118631

>In article <2jgo8t$17cu@msuinfo.cl.msu.edu> cravitma@cps.msu.edu (Matthew B Cravit)
writes:

> 2) What are the values of C1, C2 and C3? (Capacitor type,
> capacitance and voltage ratings)
>
Assuming C1 is your main filter cap, C2 is not needed as long as
the regulator input is within a few inches of C1, which is probably
true in your case. The purpose of C1 is not to provide "pure" DC,
only to keep the voltage at the input to the regulator from going
below the drop-out voltage of the regulator. For a standard 12-volt
regulator, this voltage is typically spec'ed at 14.5 volts. C1 will
be charged to a maximum of 14 * sqrt(2) - 2 * 0.7 = 18.2 volts
every 1/120 of a second in the bridge rectifier configuration
(Transformer peak voltage minus 2 diode drops). We need to choose
C1 so that it will loose no more than (18.2 - 14.5) volts at your
maximum current (1.5A ?). Using i = C * dv/dt, we get C1 = 1.5 *
1/120 / (18.2 - 14.5) = 3380 uF. A 3900 uF @ 25 volt aluminum
electrolytic is the closest standard value, or you could use a bit
bigger cap. for insurance against low line voltage, etc. Note that
C1 is polarized.

C3 is a 0.1 ceramic.

The diode across the regulator is not necessary unless you have a
large capacitance on the output of the regulator.

Mike, KK6GM

342. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 00:19:51 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2jmg37$t1k@usenet.INS.CWRU.Edu>
Source record: 118632

In article <gregCL31xy.223@netcom.com>, Greg Bullough <greg@netcom.com> wrote:
>However, the field of simple VFOs seems a bit neglected by the
>simple circuit gods.

Doug DeMaw's W1FB Notebook series has a number of VFOs meant to be dropped into crystal QRP designs. In fact, most of the radio designs in his books ellide the oscillator(s). That's an invitation to mix-and-match with a VFO if I ever saw one.

The most polished VFOs in his books are all based on air-variables capacitors. He has a few sample schematics for varactor versions, but no PC board layouts.

One thought I had: The problem with varactor stability is changes in capacitance as the temperature changes. What if one used an oven to stabilize the temperature? Is this practical? (Now someone will tell me HP and/or Motorola have been doing this for 25 years... ;-)

Stephen

--
Stephen Trier KB8PWA/AA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

343. Re: Help: I need a Z8 compiler!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 01:11:58 UTC
From: rjberry@eskimo.com
Message-ID: <CL6wo4.7o1@eskimo.com>
Source record: 118633

ka7oei@uugate.wa7slg.ampr.ORG writes:

>Yes, I need a Z8 compiler! (Not a Z80... I have several of those...)

>I already have one called "UASM" by Custom Computer Consultants (circa 4/86)
>but it is non-standard and buggy...

UASM is an assembler. Compilers (for c language) are available from
2500 AD and Bytecraft. Both are commercial products.
--
ray berry kb7ht rjberry@eskimo.com ray@connected.com 73407.3152@compuserve.com

344. Re: DDS Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 05:43:02 UTC
From: norman@pagesat.com
Message-ID: <norman.761204582@pagesat.com>
Source record: 118634

Oh I forgot to mention that the AD7008 DDS chip costs $25.00 in small Qty's.
The upper freq limit is 20Mhz or 25 Mhz depending upon grade.
Norman

--
For information regarding Pagesat's Satellite delivered usenet news
mail info request to "pagesat@pagesat.net" or call: 415-424-0384
.. Delivering 45+ megabytes of Usenet news each day via satellite
==Now for software for Windows==18"receive Antenna =======

345. Usenet MC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 14:31:48 UTC
From: te_s347@ceres.king.ac.uk
Message-ID: <2jo20k$o2@ceres.king.ac.uk>
Source record: 118635

Oh, tricky one. I think I'll have to stump for
sci.geo.fluids
Let's see someone get out of that.

To all you RADIO hams: CQ? CQ!
Giles...

346. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 14:34:07 UTC
From: kirkland@bnr.ca
Message-ID: <1994Feb14.143407.4204@bnr.ca>
Source record: 118636

Part of the problem with varactor tuned VFO's is that any noise on the tuning voltage will modulate the VFO - this includes both internal and external noise sources, e.g. thermal noise within the varactor due to its resistance and power supply noise. In tuning a VCO a good low noise voltage source is needed. Randall Rhea in "Oscillator Design & Computer Simulation" says that he avoids the use of the "bipolar monlithic voltage regulator" as a power source for oscillators as they have unpredictable and erratic noise performance (note the use of input/output caps (0.1 uf) on these regulators to prevent oscillation). He states that zener diodes are also noisy but generally less erratic, but with output R-C filtering, they are a better selection than inexpensive monolithic voltage regulators. One would expect that these ideas apply to the voltage source used to tune the VCO as well.

347. Re: A few more (different) questions!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 14:46:20 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb14.144620.19038@ke4zv.atl.ga.us>
Source record: 118637

In article <1994Feb12.215920.1@aurora.alaska.edu> fsrla@aurora.alaska.edu writes:
>Yep, another post.....but this one is of
>a different nature, though it is MORE
>questions......sigh.....
>
>1. What exactly is a varactor diode??? What
>does it do? Where do I go about purchasing them?
>I can't find any in the catalogs I have.

A varactor diode is a specially characterized semiconductor junction which, when reverse biased, has a known capacitance versus voltage response. All reverse biased semiconductor junctions have a variable capacitance in response to variable reverse voltage, but the value of the capacitance can vary from device to device. Varactors are made to have specific characteristics. Note that this means that you can often use regular rectifier diodes as varactors if you aren't concerned with a particular characteristic. Motorola makes an extensive line of MVxxxx varactor diodes. They're available from most Motorola distributors, and mail order places like Digikey carry a few different varactors.

>2. Are enameled wire and insulated wire the same thing?

Enamel is a way of insulating wires. It's basically paint. Other methods of insulation use plastic, rubber, or paper wrappings. Enameled wire is used primarily for winding coils because the paint is much thinner than the other types of insulation so you can get more turns of wire per inch.

>3. In relation to number 2 up there....when wireing your
>own toriods, is wire size, and insulation incredibly important?
>It seems like they would be, but a friend of mine said that
>as long as the wire size is close to what it says, than it would
>be fine.

In most cases, the insulation type and wire size are not extremely critical. In some cases they are. If you're filling a toroid with wire, the enamel insulation allows you to get more turns on the core for a given wire size. Wire size is important only for it's current carrying ability. You have to use wire that's heavy enough to carry the design current without excessive I*R losses in the wire. Much more important is the core material. Different core mixes are required for different frequency ranges.

Gary
--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

348. Re: DDS Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 16:13:36 UTC
From: jjw@seastar.org
Message-ID: <CL82Eq.1JD@seastar.org>
Source record: 118638

As quoted from <norman.761156831@pagesat.com> by norman@pagesat.com (Norman Gillaspie):

> The secret of the year seems to be the Analog Devices AD7008 DDS with on
> chip DAC. This unit will provide 32 bit tuning resolution and a 10
> bit DAC. Included are registers for AM an Phase modulation. All this
> in a 44 pin plcc package.
>
> Norman

Well, it's not the secret of the year, but it *is* downright
difficult to get one to play with. The local distributors will sell
it at the advertised price only if you want to buy in lots of 100 at a
time. For qty onesies, try about $100+, which puts it slightly above
the price for a whole pcb kit from Elktronics, or the other kit from
Canada.

--
When I die, they'll bury me John Welch, N9JZW
in the Tomb of the Unknown Hacker. jjw@seastar.org

349. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 17:03:08 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2joasc$psd@hpscit.sc.hp.com>
Source record: 118639

>One thought I had: The problem with varactor stability is changes in
>capacitance as the temperature changes. What if one used an oven to
>stabilize the temperature? Is this practical? (Now someone will tell
>me HP and/or Motorola have been doing this for 25 years... ;-)
>
> Stephen

Here at HP Santa Clara Division, we make an ovenized crystal oscillator (model 10811) which has a tuning diode for electronic fine tuning (there is also a mechanical fine tuning adjustment). The tuning diode is semi-ovenized by proximity to the crystal oven casting and as a result does not contribute significantly to the temperature coefficient of the overall oscillator, which is spec'ed at 2.5 parts in 10^9 over 0 to 70 degrees C. The tuning diode has a tuning range of +/- a part in 10^8.

Also, be sure to read the Motorola Ap. Note about temperature drift of tuning diodes. You can get rid of a lot of it by compensating for the well known 2 mV. per degree C drift of the turn on voltage of a silicon junction diode, as the Ap. Note discusses.

Also, note that some Zener diodes are much quieter than others for biasing tuning diodes. The 10811 oscillator uses a 1N825 Zener, which is very quiet, plus we follow it with an RC filter.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

350. Good substitute for 1N23 as noise source?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 18:44:46 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2jogqu$7lb@usenet.INS.CWRU.Edu>
Source record: 118640

I'm thinking about building the gated noise source in the 1993 ARRL Handbook. It uses a 1N23 for noise, but I haven't seen that diode in catalogs or at the local surplus dealer. (I don't even know whether it's silicon or germanium.) What is a reasonable substitute for the 1N23? I assume I could use any old diode with a poor noise figure?

Stephen

--
Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

351. Re: Antenna help..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 19:10:07 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Feb14.191007.5285@galileo.cc.rochester.edu>
Source record: 118641

In <3caoHc1w165w@p-cove.UUCP> wolfman@p-cove.UUCP writes:

> I want to attempt to build my own 2m vertical.. I have never built one
> before, so I would like any suggestions ideas, plans, or design ideas
> that any of you would have. I would like one that has a high gain if it's
> possible.

If you are willing to sacrifice gain, as a first antenna I would suggest a quarter-wave ground-plane. I used brass hobby tubing and rods for the elements because you can get then to telescope into each other to make tuning a breeze. The Ground radials aren't really critical, just cut them to about the right length and solder them to the flange of an SO-239 or a BNC-female chassis connector (much harder). Bend them down at about a 45-degree angle. Solder a 12-inch piece of tubng to the center post and telescope a 12-inch piece of rod into the open end of the tubing. With the antenna well away from nearby objects (preferably WAY up in the air), apply power through a good VHF SWR bridge and adjust the length of the vertical section to minimize SWR at your desired center frequency. Then diddle with the angle of the radials. Keep repeating these steps until you are satisfied that you can't go any lower. Then solder the joint between the tubing and the rod and cover the solder with some heat shrink tubing.

For better mechanical strength, get some PC-7 paste epoxy (or your favorite equivalent) and build a cone of the stuff between the flange and the vertical element. ALLOW THIS TO FULLY CURE BEFORE YOU TUNE THE ANTENNA!!!!!

> I would also like to know if it's possible to use a vertical antenna for
> making contacts with the Mir space station, the shuttle, or other sats
> that use fm/packet..

I've heard of it being done, though I've never done it myself.

> 73 de Aaron
> KB8PFZ

-Bill VanRemmen,KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.
==========
"Experience should teach us to be most on our guard to protect liberty
when the government's purposes are beneficient . . . the greatest
dangers to liberty lurk in insidious encroachment by men of zeal, well
meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928

==========

352. Re: Help: I need a Z8 compiler!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 19:36:39 UTC
From: mzenier@eskimo.com
Message-ID: <CL8BtA.LqC@eskimo.com>
Source record: 118642

In <52973@uugate.wa7slg.ampr.org>, ka7oei@uugate.wa7slg.ampr.ORG wrote:
: Yes, I need a Z8 compiler! (Not a Z80... I have several of those...)
: Does anyone have any other suggestion?

I wrote a family of cross assemblers and posted them to the
net several years ago. Z8 included.

If you have FTP capability, they are in
/pub/archives/alt.sources/Frankasm on keos.helsinki.fi.

They are also available from the C User's Group (the code library
associated with "The C User's Journal" magazine. You can buy
individual packages on floppy disk, but I recommend you get the
CD-ROM (if you know someone with a drive) from Walnut Creek, the
CD-ROM publisher. This is because several other cross-assembler
packages are in the collection, too. My stuff is "disk" 335, the
Frankenstein Cross Assemblers. For my package, you need a C compiler
and the YACC or Bison parser generator (Disk 285? from the same
library or on one of the Simtel mirror sites).

Mark Zenier mzenier@eskimo.com markz@ssc.com

353. Re: Varactor tuned VFOs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 20:46:17 UTC
From: tomb@lsid.hp.com
Message-ID: <CL8F15.MIv@hpcvsnz.cv.hp.com>
Source record: 118643

Tom Bruhns (tomb@lsid.hp.com) (That's me) wrote:
: frequency
: locking is especially easy, since if you assume that the
: VCO won't drift too much in a single count period (say
: 1/10 second), you only have to keep track of the least
: significant bits to get enough info for a correction.

etc.

There has been enough interest in this posted that I wanted to follow up with some observations about the control loop. It's not too hard to get right, but does take some thought. I'm assuming you can find my original article to get the gist of the idea in case you missed it...

Be warned, the following is a bit long.

VCO: You will want a vco that's basically pretty stable, so the correction circuitry won't get fooled, and so you have good short-term performance. This means that it shouldn't jump frequency, at least not very far (50Hz is way more than you'd want to see, even though the controller could correct it), and the drift rate should be reasonable: not exceeding 10Hz/sec would be a decent goal, though you could tolerate quite a bit more. Since the controller only gets a shot at correcting the frequency once per 1/10 second (in this example), you will get all the short-term problems of the vco whistling right through. But it could have a lot of long term drift and you wouldn't care-- too much. You will want a reasonably linear tuning rate, so that the gain of the control loop doesn't change too much as you change frequency. And you do need to characterize the total drift expected, so you can do a decent job in the control loop to accomodate that max change.

VCO control: You should plan to cover the band of interest with a reasonably high change in voltage. This is so that small changes in voltage won't cause as much frequency jump as they would if you were trying to do the control over a very small voltage change. The control voltage reference, as someone else pointed out, should be stable. You can get little reference chips now that should be good for this job: low power and in things like SOT23 cases.

Tuning: I have in mind two rather different ways to accomplish the "analog" tuning. The first uses something like

a 10 turn pot to directly divide down the reference voltage and feed to the VCO control input. If you covered 200kHz, then this would be 20kHz/turn, probably a reasonable tuning rate. If you want, you can have a "fine tweak" single-turn pot added in. In any event, this control voltage will be summed with the locking control voltage--the output of the integrator that accumulates the errors. You can do the summing in an op amp, or just resistively.

Control: I suggested a four-bit counting scheme. The idea is to have two modes: "memorize" and "control." In the memorize mode, the output of the counter is transferred to the latch at the end of each count period. Because the latch contains the same info as the counter, no correction is made. Also during this time, the control integrator is reset to zero with either an FET switch or a mechanical switch. When you switch to "control" (or "lock") mode, the current latch value is held. Then if the counter, at the end of the count period, is different from the latch value, a pulse is integrated onto the control integrator. This is done as a pulse in a small fraction of a second between count periods, so that the VCO frequency will reflect the whole correction during the next count period. You select the integrator gain such that a 7 count error will correct (just under) 70 Hz at the maximum slope of the frequency-vs-control curve of the VCO. So you may only correct 50 Hz, say, at the other end of the VCO control curve where it's less sensitive. But since your correction was saved on an integrator, then the next count period will detect the remaining 20Hz error (plus any additional error) and take most of that out. As you can see, if you change the gain of the system, you can get an exponential decay or a damped "ringing" in toward the right frequency. If you overcorrected too much, you could, of course, get oscillation. You must select the gains correctly. Also, to keep analog noise reasonably low, you may well want an integrator that only can take out, say, 5kHz errors with a 5 volt swing, dividing down its output before sending to the VCO (just part of the resistive summing network with the tuning voltage from the pot). Some notes about what you are correcting: you only get to correct what you count. If the VCO is drifting during the counting, its instantaneous frequency at the end of the count is not what the count tells you it is. So if it's drifting in one direction at a constant rate, for example, you will always be behind in your correction. Those who know control systems will immediately recognize that you can design a control system to keep up exactly with such errors. But--the idea here is to KEEP IT SIMPLE! You could _probably_ do the whole thing in an op amp, a GAL6001, and a colorburst-->60Hz clock divider (like 5 clocks of counting and 1 clock of

integrating), with the usual set of analog parts to match.

More on tuning: I mentioned a second tuning method above. This would eliminate the 10 turn pot. The idea here is to build the control integrator so its output is very stable. You use it to directly control the VCO. Assume 10 volt swing to control 200kHz. That means 50mV/kHz, or 50uV/Hz. The digital control part, then, would integrate only about 500uV/count--you have to be pretty careful about the design here to make sure you didn't get digital noise into the integrator, but it doesn't scare me too much. Now the tuning control would be an input to the integrator: you unlock the loop, and feed a + or - current into the integrator to ramp up or down. You can do this with some fairly simple ckts that will make the tuning rate slow at first and accelerating, so you can get from one end of the band to the other rapidly. As soon as you let go (let's say you have a center-off toggle switch to do this), it goes to lock mode and resets the "rate of tuning" circuit, so you can fairly easily "pulse" the switch to get exactly on. Dunno for sure if this tuning scheme would be acceptable to most users or not: we are so accustomed to direct coupling to a knob. Also, you need something for frequency readout. Maybe one of those National Semiconductor bar graph drivers would do...or a very simple 3.5 digit DVM, with a calibration table (or highly linearized VCO), just monitoring the VCO tuning voltage.

More on control: Since there is an ambiguity of +/- 1/2 count in the counter, it's probably a good idea to not integrate a full correction if you are only one count off the locked count. That is, a 1 count error could be made to integrate only a 3 or 4 Hz correction instead of a full 10Hz. This should be fairly easy to do in the simple "four bit dac" -- 4 resistors -- used in this scheme.

Obviously, if you are comfortable building a VCO with lower guaranteed short term drifts--no jumps and slow thermal drifts--you can make the count period longer and the corrections smaller. This lets you get to finer steps. As Gary C pointed out, the scheme described locks to 10Hz steps, and this may be too coarse for some. Since the circuit will always end up "hunting" around that last 10Hz, it may be unpleasant to listen to, and finer control might be appropriate. It depends a lot on how short-term-stable you can make the VCO.

Final thought (for now ;-) : I suggested a counter, latch and adder(subtracter) as the key digital parts. You can also do this with an up-down counter and a latch: up-count to find the frequency, putting it in the latch. Load the counter with the latch value and down-count during lock.

then the counter value at the end is the correction
(2's complement).

73, Tom -- K7ITM

354. Re: Question about Super Dual-Band J-Pole

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 22:59:58 UTC
From: joberreu@bach.seattleu.edu
Message-ID: <2jovpe$lud@bach.seattleu.edu>
Source record: 118644

In article <2jlp6b$9vd@news.duke.edu>,
David Johnson <djohnson@acpub.duke.edu> wrote:
>I built the antenna from last Apr 73, and it seems to
>work well on 2m, but it didn't do as well as an HT with
>a whip ant on 440. What's up?
>
>SWR is in OK range, less than about 1.5:1, on 440.

Hmmm, may be unrelated, but mine used to work marvelously -- then I
moved to Seattle, and my J-Pole's reception became terrible. Turned out
FE overload was killing my receiver. I built a small filter from a cap
and surplus adjustable inductor, and all was spiffy again!

--
Jesse Oberrueter (KB7PSG)
joberreu@seattleu.edu
kb7psg@n7fsp.wa.usa.na

"For the world is hollow, and I have touched the sky!"

355. What the heck are these?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-14 23:02:30 UTC
From: mjsilva@ted.win.net
Message-ID: <45@ted.win.net>
Source record: 118645

I've got a bag full of 3-pin semiconductors, small-transistor sized. They are marked either "U1994" or "U1837E". For some reason I think they might be RF JFETs. Anyone know what they are and what they might cross to? The manufacturer's logo looks like the bottom half of an 8-sided compass rose (4 polygons). Thanks.

Mike Silva, KK6GM

356. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 12:00:25 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-761313621@unomaha.edu>
Source record: 118646
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

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Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
==========

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

357. Pkt satellite receiver card for PC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 15:35:50 UTC
From: allenw@bnr.ca
Message-ID: <2jqq4m$9cb@crchh620.bnr.ca>
Source record: 118647
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

[Q 1]:

I would like to know if there is an ISA-bus card which acts as
a satellite receiver that I can plug into my PC. My "project"
involves a satellite dish with coax cable receiving a packet RF
transmission which I would like to run into my PC for decoding.
The data would then be displayed under Windows3.1/NT/whatever.

[Q 2]:

What are Phil Karn's KA9q C functions?

If my questions don't make sense it's because I'm new to this
and don't know much about packet radio.

Thanks

Allen Willson | BNR claims no reponsiblity
allenw@bnr.ca | for my rambling.
Bell-Northern Research, Ltd. |

358. Re: Good substitute for 1N23 as noise source?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 16:59:30 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb15.165930.23950@ke4zv.atl.ga.us>
Source record: 118648

In article <2jogqu$7lb@usenet.INS.CWRU.Edu> trier@odin.ins.cwru.edu (Stephen C. Trier) writes:
>I'm thinking about building the gated noise source in the 1993 ARRL
>Handbook. It uses a 1N23 for noise, but I haven't seen that diode in
>catalogs or at the local surplus dealer. (I don't even know whether
>it's silicon or germanium.) What is a reasonable substitute for the
>1N23? I assume I could use any old diode with a poor noise figure?

The IN23 was a point contact diode used in radar receivers. Similar diodes for this purpose would be 1N21 and 1N21B, or their W or R suffixed equivalents, though the R types are reversed polarity packages so beware. Ordinary diodes can be pressed into service at low frequencies, but won't produce enough broadband noise at higher frequencies to be useful.

An alternative design can use a MRF901 in controlled breakdown mode as a noise source. This can be made to produce robust output up to the gigahertz range. Vacuum tube thermal diodes can also be used as noise sources with broad bandwidths, and regulated heater current can give you a calibrated noise source.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

359. Re: Question about Super Dual-Band J-Pole

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 18:22:41 UTC
From: roger@mars.sp.paramax.com
Message-ID: <2jr3th$t2b@mars.sp.paramax.com>
Source record: 118649

David Johnson (djohnson@acpub.duke.edu) wrote:
: I built the antenna from last Apr 73, and it seems to
: work well on 2m, but it didn't do as well as an HT with
: a whip ant on 440. What's up?

The radiating element on 440 is 3/4 wavelength long which
results in a very high angle of radiation. If you tilt
the jpole over so it is about 30 degrees above horizontal
you should see gain on 440.

360. Re: Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 20:49:13 UTC
From: alanb@sr.hp.com
Message-ID: <CLA9u2.2ID@srgenprp.sr.hp.com>
Source record: 118650

Matthew B Cravit (cravitma@cps.msu.edu) wrote:
: I am trying to design a regulated 12V power supply ...

: The secondary of the transformer is going to be around 14V 1.5 A, and
: the regulator will be a 7812.

: 1) Have I overlooked anything electrical-wise or safety-wise
: in the circuit? As I said, it's been a couple of years since I
: designed a P.S. and I was going from memory here.

The 7812 needs at least a 3 volt drop (i.e. 15V at the input) for
proper operation. Don't forget to consider the 120-Hz ripple across
the filter capacitors: You need 15V at the bottom of the ripple.
If the ripple is 3V p-p, for example, then you need 16.5V DC minimum
at the input to the regulator.

: 2) What are the values of C1, C2 and C3? (Capacitor type,
: capacitance and voltage ratings)

The capacitor at the output of the regulator is there to improve the
output transient response. A 1 uF tantalum electrolytic would be a
good choice.

The cap at the input is only needed if you have long leads between the
filter capacitor and the regulator.

The filter capacitor size depends on the required ripple voltage.
I use the formula:

$$\text{Peak-to-peak ripple voltage} = \frac{\text{Load current}}{2 * F * C}$$

Where F = 120 Hz and C is the capacitor size. To solve for C, just swap
the position of ripple voltage and C in the formula. The above formula
is actually a bit conservative. However, with high-current, low voltage
supplies, the capacitor series resistance sometimes becomes the limiting
factor for ripple voltage. That's why it can make sense to use more than
one filter cap in parallel to get the required total capacitance.

: 3) Can the 7812 handle 1.5 - 2 A of current? If not, is there
: another fixed 12V regulator I can use (I don't want to use an
: adjustable regulator for reasons of cost and simplicity of
: circuit design)

Not reliably. I generally consider a 78XX to be a 1A device. You can
use two in parallel. If you do that, I suggest including a .1 ohm
(or so) resistor in series with each output to balance the currents.

Be sure to use proper heat sinking. Power dissipation equals load current times (input voltage minus output voltage). If the input is 17V, the output is 12V, and you have a 2A load, that's 10 watts of dissipation, which would require a fair-sized extruded aluminum heat sink.

AL N1AL

361. Re: code practice oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 20:51:30 UTC
From: alanb@sr.hp.com
Message-ID: <CLA9xv.2nx@srgenprp.sr.hp.com>
Source record: 118651

abel@vax.sonoma.edu (abel@vax.sonoma.edu) wrote:
: Well, we had the simplest xmitter thread, so I thought I would start
: a simplest code practice oscillator thread. ...
: Seems like I saw a circuit with six components: key, speaker, battery,
: transistor, resistor and capacitor.

How about: key, battery, buzzer?

AL N1AL

362. Surface-mount technology?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-15 23:42:14 UTC
From: uri@watson.ibm.com
Message-ID: <CLAHuF.15o8@hawnews.watson.ibm.com>
Source record: 118652

Hi, folks!

Anybody did any PCB with surface-mount chips
on it? Preferably big ones (:-), like 112 pins?
Wanna share your experience? Can you etch such
a board at home (considering the accuracy
required - there's between 0.3 and 0.7 mm
between the pins!)? Can you solder such
a beast, and how (assuming you don't have
a reflow oven at home :-)?

Thanks! Please e-mail replies.
--
Regards,
Uri. uri@watson.ibm.com scifi!angmar!uri

<Disclaimer>

363. Re: Good substitute for 1N23 as noise source?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 01:38:40 UTC
From: smattila@metz.une.edu.au
Message-ID: <3412@grivel.une.edu.au>
Source record: 118653

The 1N23 is a very special diode. Its old like heck, but still
vide used and difficult to find. Try Nebraska Surplus Sales, he
will sell you even one diode.

1N23 is point-contact diode, sensitive to static electricity,
even to RF fields, Vr is something like 5 V or even less. It
goes up to 10 GHz. I have not seen any explanations about the
material, I guess it is silicon diode.

When used as a detector diode, you can replace it with new and
expensive low-barrier Schottky microwave diodes, but as a noise
source I do not know any replacement above 500 MHz. Below that
you can try low capacitance silicon diodes like 1N4148.

Sakari Mattila smattila@metz.une.edu.au VK2XIN, OH2AZG (Cis: 71307,1525)
P.O.Box u13 tel. +61 67 733752 ----------
Armidale NSW 2351 ----------
----

364. homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 04:27:30 UTC
From: jimla@tekig1.PEN.TEK.COM
Message-ID: <13751@tekig7.PEN.TEK.COM>
Source record: 118654

Hi,

Has anyone built a ladder filter for SSB using cheap crystals? My Digi-Key catalog has a wide selection from 3.579 MHz to 60 MHz for $1.00 - $1.50 each. How many crystals are needed for 30-40 dB sideband supression? What are the factors in selecting the carrier frequency? If I want a 2.7 KHz bandwidth, does that determine the useable crystal frequency range? Digi-Key sells CTS, Epson, and ECS crystals. Does one brand work best?

Thanks!

Jim
N7IHQ

365. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 06:02:22 UTC
From: kg7bk@indirect.com
Message-ID: <CLAzFz.Iwn@news.direct.net>
Source record: 118655

James G Larsen (jimla@tekig1.PEN.TEK.COM) wrote:
: Hi,

: Has anyone built a ladder filter for SSB using cheap crystals? My
: Digi-Key catalog has a wide selection from 3.579 MHz to 60 MHz for
: $1.00 - $1.50 each. How many crystals are needed for 30-40 dB sideband
: supression? What are the factors in selecting the carrier frequency?
: If I want a 2.7 KHz bandwidth, does that determine the useable crystal
: frequency range? Digi-Key sells CTS, Epson, and ECS crystals. Does
: one brand work best? Jim N7IHQ

Jim, if you can get access to a late '50s - early 60's ARRL Handbook,
your questions will be answered. I still have a bunch of 455KC (it really
does say KC on them) range crystals that I never did anything with.

73, Cecil, kg7bk@indirect.com

366. What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 08:42:44 UTC
From: mjsilva@ted.win.NET
Message-ID: <56@ted.win.net>
Source record: 118656

It just occurred to me that I could finally get an answer to a question I've wondered about for a long time, namely:

As homebrewers, what test equipment do you use in getting your projects working? Are you using 'scopes, freq. counters, signal generators, sweep generators, GDO's, spectrum analysers? Any other obvious things I've forgotten at 1AM? Comments?

If I get enough responses I'll tabulate them and post them.

Thanks,

Mike, KK6GM

367. Re: Help: I need a Z8 compiler!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 10:44:47 UTC
From: agodwin@acorn.co.uk
Message-ID: <2jstev$6el@acorn.acorn.co.uk>
Source record: 118657

In article <CL8BtA.LqC@eskimo.com> mzenier@eskimo.com (Mark Zenier) writes:
>
>I wrote a family of cross assemblers and posted them to the
>net several years ago. Z8 included.
>
>If you have FTP capability, they are in
>/pub/archives/alt.sources/Frankasm on keos.helsinki.fi.
>

And very useful they are too - I use them for all the 8-bit processors
I've worked on recently, and have built 8051, 6805 and Z80/64180 frankasm
assemblers on Unix SVR3, 4.3 BSD, Acorn RISC OS and PC MSDOS with very
little trouble.

I know they're not strictly 8-bit processors, but have you considered
doing flavours of frankasm for the Microchip PICs ?

-adrian

368. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 10:45:44 UTC
From: ega066@comp.lancs.ac.uk
Message-ID: <1994Feb16.104544.10438@comp.lancs.ac.uk>
Source record: 118658

If you are considering building an SSB xtal filter it's well worth looking at the article by W7ZOI on Cohn xtal filters. It appears in 'QRP Classics', and is a reprint from QST. Although I've only built CW filters based on this approach, SSB filters can easily be realised also, and I would think that a filter with 3 or 4 xtals would satisfy your requirement. It probably doesn't matter too much on the make, as long as all the crystals are quite well matched in frequency (to within 10 percent of the filter passband is a good rule).

73
Simon G0GWA.

369. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 12:33:48 UTC
From: bmitchel@CBA.Kodak.COM
Message-ID: <199402161233.AA19365@hobby1.cba.kodak.com>
Source record: 118659

> As homebrewers, what test equipment do you use in getting your
> projects working? Are you using 'scopes, freq. counters, signal
> generators, sweep generators, GDO's, spectrum analysers? Any other
> obvious things I've forgotten at 1AM? Comments?
>
> If I get enough responses I'll tabulate them and post them.
>
> Thanks,
>
> Mike, KK6GM
>
>
>
I use an RF signal generator, Scope, and the most important piece of test
equipment is my commercial receiver. A frequency counter would be nice,
but not necessary, and a spectrum analyzer would be nice, but without the
spectrum analyzer, I use the scope to view the waveform for amplitude and
rough estimate of purity, then the receiver for checking the amplitude of
harmonics. Scope is probably not necessary either if you have an rf voltmeter,
I guess anyway, I never used one, I've always been spoiled with a scope.

RF signal generators for HF show up at the hamfest for basically nothing.

73 es gud luck Brad WB8YGG

370. Help me find quartz for TV station in Novosibirsk

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 13:50:16 UTC
From: Al-r Mainichev <main@msib.nsk.su>
Message-ID: <AAOIYOjmC5@msib.nsk.su>
Source record: 118660
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi, world!

Anybody know where can I find a few quartz resonators for
governmental TV station in Novosibirsk, becouse component plants in
Russia are stay or closed and component distributors demand minimal order
in $1000.

Please, help me find quartz

Freq Q-ty
98,217 MHz 1
48,972 ... 1
49,986 1
50,388 1
50,791 1
52,000 1
52,201 1
52,590 1
53,368 1
44,333333 1
5,13550 8 <-- urgent & urgent
5,040 2 <--

98,217 KHz 2

Please, answer me directly by e-mail, because I don't follow
this newsgroups.

Thanks,

Alexandr N.MAINICHEV /Telex: (64)412062 OCTET SU,
/ BOX 50516
Dipl.Physic. / POST BOX 82, / main@msib.nsk.su
Director of / NOVOSIBIRSK-90, / Fax:(383 2) 35 68 11
"Agency MicroSib" / 630090, RUSSIA / Ph :(383 2) 35 44 28

371. Re: Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 14:01:57 UTC
From: dtiller@cscsun.rmc.edu
Message-ID: <CLBLnA.4yC@cscsun.rmc.edu>
Source record: 118661

Matthew B Cravit (cravitma@cps.msu.edu) wrote:
: I am trying to design a regulated 12V power supply (to power my HT at
: home) and need advice on the following (since it's been a long time
: since I have designed P.S's and am going from memory).
: My questions are:
: 1) Have I overlooked anything electrical-wise or safety-wise
: in the circuit?

I'm curious why the MOV is on the line side of the switch. I'd put it
on the load side so that it wouldn't pop without the device being turned
on. It may save you having to replace it when there was little possibility
of damaging your PS. The addition of a choke in series with the +12
lead going to the HT may help stop RF from getting fed back into the AC
line, causing interference.

: 2) What are the values of C1, C2 and C3? (Capacitor type,
: capacitance and voltage ratings)

For the filter caps I'd suggest electrolytics, with voltage ratings >= 2x the
output voltage of the circuit. As far as value goes, you'll need several
thousand to tens of thousands of uF, depending on load and ripple requirements
of your HT. The ARRL handbook has a section of PS's, and a neat discussion
on calculating ripple.
--
David Tiller | Network Administrator | Voice: (804) 752-7373 |
dtiller@rmc.edu | Randolph-Macon College| Fax: (804) 752-7231 |
n2kau@wa4ong.va.usa.na | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
+++Arch-Conservative+++ | Ashland, Va 23005 | 77d 31' 32.19" W |

372. Re: code practice oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 14:46:43 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.761410101@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118662

alanb@sr.hp.com (Alan Bloom) writes:
>abel@vax.sonoma.edu (abel@vax.sonoma.edu) wrote:
>> Well, we had the simplest xmitter thread, so I thought I would start
>> a simplest code practice oscillator thread. ...
>> Seems like I saw a circuit with six components: key, speaker, battery,
>> transistor, resistor and capacitor.

>How about: key, battery, buzzer?

How about pursed lips? (whistle tweeeet tweet tweeeet tweet....)

Now the question is "is that ONE or TWO components?"

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

373. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 14:58:55 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2jtcbf$7t8@usenet.INS.CWRU.Edu>
Source record: 118663

In article <CLAzFz.Iwn@news.direct.net>,
Cecil Moore <kg7bk@indirect.com> wrote:
>Jim, if you can get access to a late '50s - early 60's ARRL Handbook,
>your questions will be answered.

The _W1FB Design Notebook_ reprints some articles on crystal ladder filters, too. It's still in print, so it might be a little easier to find.

Stephen

--
Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
(dave@cs.arizona.edu & miked@vnet.ibm.com)

374. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 15:50:05 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Feb16.155005.20865@galileo.cc.rochester.edu>
Source record: 118664

In <13751@tekig7.PEN.TEK.COM> jimla@tekig1.PEN.TEK.COM writes:

> Hi,
>
> Has anyone built a ladder filter for SSB using cheap crystals? My
> Digi-Key catalog has a wide selection from 3.579 MHz to 60 MHz for
> $1.00 - $1.50 each. How many crystals are needed for 30-40 dB sideband
> supression? What are the factors in selecting the carrier frequency?
> If I want a 2.7 KHz bandwidth, does that determine the useable crystal
> frequency range? Digi-Key sells CTS, Epson, and ECS crystals. Does
> one brand work best?
>
> Thanks!
>
> Jim
> N7IHQ

Definitely read "A Unified Approach to the Design of Crystal Ladder Filters" in the May 1982 issue of QST. Check your local library, Ham Club or University Engineering library for back issues...

'73

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.
==========
"Experience should teach us to be most on our guard to protect liberty
when the government's purposes are beneficient . . . the greatest
dangers to liberty lurk in insidious encroachment by men of zeal, well
meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
==========

375. Alinco HT battery pack disassembly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 19:21:25 UTC
From: au156@yfn.ysu.edu
Message-ID: <2jtrnl$fou@news.ysu.edu>
Source record: 118665

The stock nicad battery pack for my Alinco DJ-160 handie-talkie (EBP-10N) is about to give up the ghost. I'd like to replace the nicads myself, and maybe add some drop-in charger contacts while I'm at it.

Could someone who has already taken apart one of these battery packages describe the procedure? The thing is held together pretty tightly without any obvious plastic tabs in sight to push to release the case halves.

Hank Riley, N1LTV
au156@yfn.ysu.edu

376. Re: Alinco HT battery pack disassembly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-16 23:36:06 UTC
From: lamont@cup.hp.com
Message-ID: <CLCC87.HIx@cup.hp.com>
Source record: 118666

Hank Riley (au156@yfn.ysu.edu) wrote:

: [Alinco DJ-160 (EBP-10N) battery pack dissasembly]

: Could someone who has already taken apart one of these battery
: packages describe the procedure? The thing is held together pretty
: tightly without any obvious plastic tabs in sight to push to release
: the case halves.

There is a screw behind the label on the back of the pack, which must
be removed. You will also need to remove the +/- label, and then the
pack will separate at the top, and hinge at the bottom. The only real
difficulty comes when you try to stick the stickers back on.... :-(

If you drop them from high enough, you can break the tabs on them...

lamont

The above is not a statement of the Hewlett-Packard Company.

377. Car power jack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 00:23:09 UTC
From: CROFTW@caedm.et.byu.edu
Message-ID: <u*&@byu.edu>
Source record: 118667

I want to build a car power adaptor (cigarette lighter type) for a kenwood 28A. A friend of mine has one he bought that says it is filtered. Do I need to do anything other than put a couple of capacitors in parallel with the 12V leads??

378. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 03:06:18 UTC
From: halbert@world.std.com
Message-ID: <CLCLyJ.A2A@world.std.com>
Source record: 118518

If you want to build your own crystal ladder filters, you may be interested in a spreadsheet I built that performs the calculations in W7ZOI's May 1982 QST article (see below). The spreadsheet can be FTP'd from:

world.std.com: pub/hamradio/ARRL/Server-files/info/qst/xtalf.zip

It's also available from the info@arrl.org mail server, though I forget how that works at the moment. Below is the text explanation included in the .zip file.

As noted below, there is a numerical error in a table in that article. See QST, November 1993, p. 81, Feedback. The spreadsheet has the corrected value.

Regards,
Dan Halbert, KB1RT
halbert@world.std.com
==========
The files in this package are:

XTALF.WK1 (Lotus 1-2-3 spreadsheet)
XTALF.FMT (spreadsheet formatting info)
XTALF.TXT (this file)

Author: Dan Halbert, KB1RT (good in the Callbook).

This package is a Butterworth and Chebyshev crystal ladder filter calculator, done as a Lotus 1-2-3 spreadsheet. This spreadsheet was created on Lotus 1-2-3 Release 4. I have designed it to print on one page when formatted with the given formatting information.

See May 1982 QST, "A unified approach to the design of crystal ladder filters", by Wes Hayward, W7ZOI, p. 21. See also January 1990 QST, "A tester for crystal F, Q, and R", p. 21, by Doug DeMaw, W1FB, which describes a simple test instrument for making the measurements described in the W7ZOI article. Both these articles are reprinted in the ARRL book "W1FB's Design Notebook", by Doug DeMaw.

The spreadsheet is initially loaded with data from the example in that article. The May 1982 QST article has one typo in it, for Butterworth N=4, k_23.

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379. One more question!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 04:40:49 UTC
From: fsrla@aurora.alaska.edu
Message-ID: <1994Feb16.194049.1@aurora.alaska.edu>
Source record: 118519

Thanks to all those who've replied to
my posts....

Getting conflicting reports on the wire
for winding coils, though. So, let's
apply this to my "real-life" situation, here.

I'm building a simple (or so I thought)
reciever for 15-Mhz. It calls for a
coil with 26 turns of #24 enamel wire.
I solved on problem, I've found the
enameled wire! YAY! However, our radio
shack only carries size #22 then goes to
#26. No #24 at all, and quote the
salesman, "We don't carry it 'cause
it's, uhhh, to small." Exact quote, no fib!

So, will either of these sizes work, what would
I have to change? Or do I need to find a catalog
for people who carry this?

Thanks for the help!!!!!

Roger Asbury WL7NT
FSRLA@Aurora.alaska.edu

380. Car power jack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 14:45:09 UTC
From: jangus@skyld.grendel.com
Message-ID: <761496309snx@skyld.grendel.com>
Source record: 118520

In article <u*&@byu.edu> CROFTW@caedm.et.byu.edu writes:

>
> I want to build a car power adaptor (cigarette lighter type) for a kenwood
> 28A. A friend of mine has one he bought that says it is filtered. Do I need
> to do anything other than put a couple of capacitors in parallel with the 12V
> leads??
>

The "store bought" plug in adaptors have a nice inductor in series with
the DC supply to the HT. This serves two purposes, it eliminates the
whine of an alternator system, and it stops any spikes from getting to
the HT (When used with a large electrolytic at the HT side).

Made all the difference with my Kenwood TH-77A handheld in the truck.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

381. Motorola 1470A: can it be modified for 2meter band?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 15:41:34 UTC
From: angerhof@bambam.es.com
Message-ID: <2k037e$a1e@orca.es.com>
Source record: 118521

I was recently given an old Motorola car phone, model 1470A. I opened up
the massive electronics box (which weighs about 50 pounds) and found
plug-in units which were labeled something like this: T - 158.520 R - 152.08.
As there were 7 such units, I am guessing there are 7 channels available
for the phone use.

Can this unit be easily adapted to transmit and receive on the 2M band?

Any opinions on this particular model, is it worth the trouble to try the
modifications?

--Norman AA7QG angerhof@dsd.es.com

--
Norman Angerhofer angerhof@dsd.es.com
540 Arapeen Dr.
SLC, UT 84108

382. Frequency doubler design, help, VFO.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 15:43:13 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb17.234313.1@ntuvax.ntu.ac.sg>
Source record: 118522
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

I need a simple design for a 20m VFO that drops into the place of a X-tal. My exact transmitting circuit is the 6-watter from the 1986 ARRL Handbook.

I have also built a 40 meter VFO from the QRP tranceiver designs in the 1994 ARRL Handbook and they work. But when I use the VFO with the freq. doubler circuit from the September 1993 issue of CQ, I found the output to be too weak and fundamental frequency rejection is insufficient.

The doubler was originally intended for doubling 3.5 MHz to 7 MHz but I am using it to double 7 MHz to 14 MHz. Is there a problem doing this and/or is there a more suitable means of deriving 20 m from a 40 m VFO?

The VFO works fine right now. I just can't get a strong and clean doubled frequency. Can anyone help me, especially if you have access to the documents I cited, could you take a look at the circuits and advise me. Tks.

73 de 9V Daniel

383. Valvo GmbH

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 18:31:17 UTC
From: ucgapam@ucl.ac.uk
Message-ID: <1994Feb17.183117.44148@ucl.ac.uk>
Source record: 118523

Hello.

I am looking for 2 radio frequency transistors.

BFW60D and BFR35A

They are apparently made by a company in Germany called Valvo but I have not been able to learn anything else about them.

Does anyone know the address or phone number of Valvo, or of a supplier of these 2 components.

Thanks for your help.

Patrick
patrick@anatomy.ucl.ac.uk

384. Re: Help me find quartz for TV station in Novosibirsk

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 21:48:55 UTC
From: jimc@megatek.com
Message-ID: <1994Feb17.214855.302@megatek.com>
Source record: 118524
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <AAOIYOjmC5@msib.nsk.su> main@msib.nsk.su writes:
>
>Hi, world!
>
> Anybody know where can I find a few quartz resonators for
>governmental TV station in Novosibirsk, becouse component plants in
>Russia are stay or closed and component distributors demand minimal order
>in $1000.
>
>Please, help me find quartz
>
>Freq Q-ty
>98,217 MHz 1
>48,972 ... 1
>49,986 1
>50,388 1
>50,791 1
>52,000 1
>52,201 1
>52,590 1
>53,368 1
>44,333333 1
> 5,13550 8 <-- urgent & urgent
> 5,040 2 <--
>
>98,217 KHz 2
>
>Please, answer me directly by e-mail, because I don't follow
>this newsgroups.
>
>Thanks,
>
>----
>Alexandr N.MAINICHEV /Telex: (64)412062 OCTET SU,
> / BOX 50516
> Dipl.Physic. / POST BOX 82, / main@msib.nsk.su
> Director of / NOVOSIBIRSK-90, / Fax:(383 2) 35 68 11
> "Agency MicroSib" / 630090, RUSSIA / Ph :(383 2) 35 44 28
>
>
>
>
>

>

Most of you probably already know this, but the commas in this posted
request serve the same funtion as our decimal points. So they are *not* looking
for XTALs in the GHZ range...

--
Jim Campbell "The Tye-Dye Guy" | "Remember to tweet!"
jimc@megatek.com | When in doubt, you're probably
WB6ZPB NSS ASA TNS | unsure about something

385. gasFETs for preamps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 21:51:03 UTC
From: zardoz@ornews.intel.com
Message-ID: <2k0oso$qg3@ornews.intel.com>
Source record: 118525

I finally toasted the gasFET in my old Hamtronics 2 meter preamp somehow.
I called Hamtronics and they said that they are an appliance outlet only now.
What is a good, cheap source for these devices? Mine was supposed to have
been .7 db noise with 13-20 db gain, that's all I know.

Other than soldering them in, what are the hazards once installed? How
much loosely capacitively coupled energy can the gate take? What is the
detrimental effect of installing the preamp inside a rig after a chain of
PIN diodes and other junK? (other than a hacked up rig, of course).
I don't want to mast mount it and I use 75 ohm 3/4" hardline.
Thanks,

--
zardoz@ornews.intel.com WA7LDV

386. Re: Power supply design questions (sort of long)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-17 22:31:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <199402172231 55OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 118533

> I'm curious why the MOV is on the line side of the switch. I'd
> put it on the load side so that it wouldn't pop without the
> device being turned on. It may save you having to replace it
> when there was little possibility of damaging your PS.

I'd recommend moving the MOV to the transformer side of the switch too. Otherwise when you turn off the switch the residual energy in the transformer core may (will sometimes) arc over in your switch. This arc can destroy the switch especially if the transformer is large (lots of stored energy and it has to go somewhere).

387. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 00:25:46 UTC
From: drew@trl.oz.au
Message-ID: <drew.109.0@trl.oz.au>
Source record: 118526

In article <2jtcbf$7t8@usenet.INS.CWRU.Edu> trier@odin.ins.cwru.edu (Stephen C. Trier) writes:
>From: trier@odin.ins.cwru.edu (Stephen C. Trier)
>Subject: Re: homebrew SSB xtal filters
>Date: 16 Feb 1994 14:58:55 GMT
>In article <CLAzFz.Iwn@news.direct.net>,
>Cecil Moore <kg7bk@indirect.com> wrote:
>>Jim, if you can get access to a late '50s - early 60's ARRL Handbook,
>>your questions will be answered.
>
>The _W1FB Design Notebook_ reprints some articles on crystal ladder
>filters, too. It's still in print, so it might be a little easier to
>find.
>
> Stephen
>
>--
>Stephen Trier KB8PWA Dave: [H]as anyone ever met a Zamboni driver?
>Other: trier@ins.cwru.edu Mike: The next version of OS/2 will include a
>Home: sct@po.cwru.edu Zamboni driver. Let's see Microsoft top that!
> (dave@cs.arizona.edu & miked@vnet.ibm.com)

I missed the original post on this thread. If not already mentioned, look up also:

"Switchable Bandwidth Crystal Filter" Pivnichny N2DCH
Ham Radio Feb. '90.

and

"Designing and Building Simple Crystal Filters" Hayward W7ZOI
QST July '87.

Some pretty good starting values for the coupling C's are given. My own impirical work confirms the ball-park values for C. For a 1.8kHz band-pass using 4, 4.433, 5, or 6MHz crystals; C's need to be about 33pF. However, at (say) 8MHz, about 220pF C's will be required for a similar band-pass.

73, Drew, VK3XU Telecom Australia Research Laboratories.

388. Re: Frequency doubler design, help, VFO.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 03:22:26 UTC
From: alanb@sr.hp.com
Message-ID: <CLEHDE.A93@srgenprp.sr.hp.com>
Source record: 118527
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:

: ... I have also built a 40 meter VFO from the QRP tranceiver designs in
: the 1994 ARRL Handbook and they work. But when I use the VFO with the freq.
: doubler circuit from the September 1993 issue of CQ, I found the output to
: be too weak and fundamental frequency rejection is insufficient.

I'm not familiar with either the VFO or doubler design, but how about this idea: Build another VFO, but with all the frequency-determining coils and capacitors 1/2 the value. You would end up with a VFO that tunes 14-14.6, assuming the 40 meter version tunes 7-7.3. You could reduce the tuning capacitor size even further (i.e. make it about 1/4 the size instead of 1/2) to reduce the tuning range.

AL N1AL

389. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 03:28:43 UTC
From: drew@trl.oz.au
Message-ID: <drew.110.0@trl.oz.au>
Source record: 118528

In article <13751@tekig7.PEN.TEK.COM> jimla@tekig1.PEN.TEK.COM (James G Larsen) writes:
>From: jimla@tekig1.PEN.TEK.COM (James G Larsen)
>Subject: homebrew SSB xtal filters
>Date: 16 Feb 94 04:27:30 GMT
>Hi,
>
>Has anyone built a ladder filter for SSB using cheap crystals? My
>Digi-Key catalog has a wide selection from 3.579 MHz to 60 MHz for
>$1.00 - $1.50 each. How many crystals are needed for 30-40 dB sideband
>supression? What are the factors in selecting the carrier frequency?
>If I want a 2.7 KHz bandwidth, does that determine the useable crystal
>frequency range? Digi-Key sells CTS, Epson, and ECS crystals. Does
>one brand work best?
>
>Thanks!
>
>Jim
>N7IHQ

The mysteries of Internet. Your original posting showed up!

About 4 or 5 xtals will be needed to obtain satisfactory sideband rejection. However, not stated in published articles (that I have seen) is the improved sideband rejection obtainable by building your filter into a little in-line compartmented box- made from scraps of circuit board, tin-plate or brass sheet. One xtal and capacitor in each compartment, with a small hole for the connection between.

You must do some math and figure the best IF for the job. Select VFO, carrier (BFO on receive or transceiver) for minimum in-band and nearby spur production (considering harmonics of both oscillators to at least the fifth, and preferably seventh (complex subject)). If you choose a round-numbered IF (most xtals are); then you can simply employ a well-shielded frequency counter (measuring those kHz digits to the right of whole MHz and applying any necessary correction factor for the BFO) for the dial.

The bandwidth(pass) is chiefly determined by the value of coupling capacitor, those that connect each end of the filter, and those to ground at each xtal connection. Increasing C DECREASES the bandwidth. Minimum pass-band ripple is obtained when the input and and output impedances of the filter match the driving and load Z's respectively. However; even with poor matching, the ripple will probably not be too bad, and loss should not be excessive.

The xtals are made cheaply in huge batches, and match each other very closely in frequency. However, when purchasing, make sure that they are

all of the same brand, and do not mix different makes of xtal in any one filter.

73, Drew, VK3XU. Telecom Australia Research Laboratories

"If you ain't handsome- then at least be handy"
(The Red-Green Show)

390. Re: Surface-mount technology?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 04:12:27 UTC
From: alanb@sr.hp.com
Message-ID: <CLEJos.BwD@srgenprp.sr.hp.com>
Source record: 118529

Uri Blumenthal (uri@watson.ibm.com) wrote:
: Hi, folks!

: Anybody did any PCB with surface-mount chips
: on it? Preferably big ones (:-), like 112 pins?
: Wanna share your experience? Can you etch such
: a board at home (considering the accuracy
: required - there's between 0.3 and 0.7 mm
: between the pins!)? Can you solder such
: a beast, and how (assuming you don't have
: a reflow oven at home :-)?

You can solder with a fine-tipped iron, a steady hand, and good eyes (or a magnifying glass). Make sure you have some solder-wicking braid on hand for the inevitable solder bridges.

Actually soldering isn't so hard, but unsoldering a multi-pin SMT IC is virtually impossible without special tools. (A heat gun works, but will likely unsolder other nearby components and may scorch the PC board.)

To make the board, I use a laser printer and the special paper sheets designed to iron onto the PC board. You soak the paper off, and the toner remains on the board to act as resist.

AL N1AL

391. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 04:24:36 UTC
From: alanb@sr.hp.com
Message-ID: <CLEK91.CA6@srgenprp.sr.hp.com>
Source record: 118530

Michael Silva (mjsilva@ted.win.NET) wrote:

: As homebrewers, what test equipment do you use in getting your
: projects working? Are you using 'scopes, freq. counters, signal
: generators, sweep generators, GDO's, spectrum analysers? Any other
: obvious things I've forgotten at 1AM? Comments?

Must have: Multimeter (volts/ohms/amps), power supply (preferably
adjustable voltage), the usual hand tools.

Very nice to have: Audio signal generator/function generator,
RF signal generator(s), frequency counter, cheap oscilloscope, variable-
voltage AC transformer (Variac), logic probe, grid-dip oscillator.

Nice to have, but probably too expensive: Spectrum analyzer,
impedance bridge, sweep oscillator/network analyzer, digital oscilloscope,
logic analyzer, transistor parameter analyzer, IC tester, tube tester (;=)

AL N1AL

392. Laser jammer wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 04:34:00 UTC
From: st3a5@jane.uh.edu
Message-ID: <17FEB199422343126@jane.uh.edu>
Source record: 118531

Does anyone have any information regarding the building of speed-detector jamm-
ers ? If so please post or send me message by email.
Later,
Dvj

Dawn V John (st3a5@jetson.uh.edu)
ELEE undergrad
:-) "It's yesterday once more....." so sang the carpenters.
****
And God rested on the SEVENTH day.
Imp. Note:
He did not live here in the US when he created the world.
****

393. VHF Lo/High Bander-possible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 05:38:37 UTC
From: wildeb@marcus.its.rpi.edu
Message-ID: <2k1k8t$lo2@usenet.rpi.edu>
Source record: 118532

I've been told its impossible, and I've been told it will just take a little work. What I'm looking for is a radio (preferably handheld, but mobile would be fine), that can transmit and recieve on VHF lo band and VHF Hi band. While VHF/UHF is common, I was wondering if anyone knew how to modify a radio to do this, or where to get one, or where to look for more info. I ride on several fire departments and ambulances (between home and college), and home operates on Lo-band, and at school, we use Hi-band.

Any suggestions would be appreciated.

-73's
-Brian Wilde
-N2OWD

394. Re: Valvo GmbH

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 06:44:50 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.761553890@bauv106>
Source record: 118534

ucgapam@ucl.ac.uk (Patrick Martin) writes:
>
>I am looking for 2 radio frequency transistors.
>
>BFW60D and BFR35A
>
>They are apparently made by a company in Germany called Valvo but I have not been able to learn anything else about them.
>
>Does anyone know the address or phone number of Valvo, or of a supplier of these 2 components.
>
Valvo is a subsidiary of Philips (Nederlands). Valvo's headquarters are in
Hamburg. I do not have the exact address here.

Mullard is another Philips subsidiary based on UK. Usualy you can get most
of the products of the one company by the other one.
--
Claude F. (claude@bauv106.bauv.unibw-muenchen.de)

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

395. Re: Frequency doubler design, help, VFO.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 10:24:21 UTC
From: elendir@enst.fr
Message-ID: <2k250l$amn@cismsun.univ-lyon1.fr>
Source record: 118535
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Alan Bloom (alanb@sr.hp.com) wrote:
: asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:

: I'm not familiar with either the VFO or doubler design, but how about
: this idea: Build another VFO, but with all the frequency-determining
: coils and capacitors 1/2 the value. You would end up with a VFO that
: tunes 14-14.6, assuming the 40 meter version tunes 7-7.3. You could
: reduce the tuning capacitor size even further (i.e. make it about 1/4
: the size instead of 1/2) to reduce the tuning range.

That is a solution, but does not take into account how the transistor acts
versus the frequency.
The idea behind a frequency multiplier is the same as a class C amplifier.
I mean, you take the output from the VCO, and feed it into a small-signal
class C (typically a transistor with emm. grounded, or better a FET, because
FET are known to show only quadratic behaviour), whose output is connected to
a parallel LC network (or ceramic filter, or whatever) tuned at the second
harmonic. That should give you a neat output.

73 from France,
Vince (11.5 weeks and waiting)

396. Re: Good substitute for 1N23 as noise source?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 15:20:36 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.761584949@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118536

smattila@metz.une.edu.au (Sakari Mattila) writes:
>The 1N23 is a very special diode. Its old like heck, but still
>vide used and difficult to find. Try Nebraska Surplus Sales, he
>will sell you even one diode.

My junque box once had an even dozen of them.
If someone needs one, send email and we can
probably work something out. Too bad they
can't be sent via the Internet!

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

397. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 15:41:37 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CLFFLF.G3v@hpqmoea.sqf.hp.com>
Source record: 118537

I'm a self-confessed test-equipment-aholic.

Rarely on the air, usually fixing something for someone, or
developing something.....

Meter... I only use this as an ohmmeter/continuity tester, I rarely
need precision in measuring a voltage, I use a DC coupled scope instead as
any AC components and turn on/off transients can be seen.

Scope... my prime piece of test equipment. 50 MHz bandwidth seems OK,
but occasionally would like more (I use surplus HP 180 series)

Sig Gen... quite essential, you need to cover the bands of interest
and receiver IFs. AM is not so important, I use FM often. Good screening
and a good attenuator to allow you to go down to 0.1 uV is very
important. I have a surplus Marconi 2008 that the Brit army didn't hurt
too much, 10 kHz - 512 MHz with ability to sweep, lab quality, bought
dirt cheap non-working... just dial cord stuck ! :-) :-)

Power attenuator... Most essential, to allow use of test gear on TX
output without severe risk of damage, used with counter, power meter
and spectrum analyser, occasionally with scope to watch keying envelope.

GDO Have one, but can't remember using it in shack, not enough freq
precision for tuning antennas, maybe I'd do better with something with a
built-in counter ?

Counter, needs coverage to highest band of interest, and possibly to
highest freq oscillator you have.

Power meter... Found set of heads for precision RF power meter on
junk stall at rally for 50 pence, now accompanied by surplus meter. Nice
to have something accurate, but accuracy is not so important, diode
detector and power atenuator/dummy load is OK if it covers all bands of
interest.

Spectrum analyser... I know a few keen constructors who now sport
real ones bought surplus, and several who have built cable tuner based
units. You need to cover the 3rd harmonic of the highest band of
interest, but also coverage is important to about 1GHz to cover the
region of most spurious oscillations. Connect a length of coax to the
input and make a 20mm loop at the far end and you have the ultimate
trouble sniffer and tank peaker. Surplus prices for a commercial lab
grade unit hover around the bottom end of the new HF transceiver price
range, I went for a dead unit and fixed it... much cheaper as few dare
attempt such a repair job. Ironically it is easier than people think.
These machines make life easier, faster, and more easily understood.

Worth keeping a look out for a bargain. 1960s and early 1970s HP and Tek units are appearing in increasing quantities on the surplus market, so they are not as exotic as you might think.

LCR bridge... something to check capacitors is important, especially with the poor and confusing markings on many parts, is important. I'm just plain jammy, I walked into a surplus trader's place and there was a Wayne-Kerr standards lab type unit, they didn't know what it was, had priced it for what they thought the case, knobs, psu were worth, and I walked out with it for 45 pounds, it proved to be fully working.

Big box of cables and adaptors... just try doing without one.

TDR (Time Domain Reflectometer) Well, it was on this stall at a rally, and the bloke wanted 35 pounds, it proved 100% working when I got it home. This device is best described as an in-cable radar set, used to test transmission lines and connectors. It fires a pulse down the line and plots a trace of reflection voltage versus time so you can measure exactly how bad a mismatch is, and measure just how far down the line it is. It's nice to know I've got one, should I ever need it, but I must confess I've not (yet) used it in anger. The name alone frightens people, they seem to always be sold at "for the parts" prices. If people stick pins in your co-ax, then you NEED one of these...

Soldering iron... goes without saying, but thermostatic ones are addictive.

I don't have a transistor tester, it's usually clear enough after a look with the scope whether a device is worth changing. If it takes more finding then it is unlikely that a transistor tester would have found it.

Tube testers don't test transmitting tubes, and other tubes are becoming rare. If you use tubed receivers etc, then a tester is a good idea.

Receivers... very useful, to check modulation and as a more sensitive spurious/harmonic hunter than an absorption wavemeter.

Absorption wavemeter... brit licence requires me to have one and be able to use it. Just sits on the shelf. Cannot be sensitive enough to find spurii still big enough to cause trouble, but if you don't have a spectrum analyser, or high quality wide range receiver it is all that's available...

Pillar drill... makes metal bashing easier

Lathe... don't neglect the mechanical aspects, this fellow has paid for itself in fixed rotators. Allows me to attempt electro mechanical projects like wide spaced capacitors and motor drives.

****

A long list, extreme, perhaps for an amateur shack ?

The whole lot cost less than a middle-of-the-range new HF transceiver, because I did not go out shopping, but just kept my eyes open and snapped up bargains as they appeared. I learned a lot from the bits that needed fixing.

Both my typing fingers hurt,

David GM4ZNX

398. Re: Frequency doubler design, help, VFO

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 16:53:13 UTC
From: rlt@ssd.intel.com
Message-ID: <CLFIwq.IwF@SSD.intel.com>
Source record: 118538

In article 1834 of rec.radio.amateur.homebrew
Daniel writes:

> the 1994 ARRL Handbook and they work. But when I use the VFO with
> the freq. doubler circuit from the September 1993 issue of CQ,
> I found the output to be too weak and fundamental frequency rejection
> is insufficient.

> this and/or is there a more suitable means of deriving 20 m from a
> 40 m VFO?

73 de 9V Daniel

I do not have the circuit mentioned in 93 issue of CQ available to me. However, I have used other circuits to great success. Both may be found in Solid State Design by Hayward and DeMaw. One is a broadband diode doubler that is extremely simple and works at any hf frequency. However, it does require a fair amount of drive. (about +10dBm? can't remember) Even with randomly chosen diodes in the doubler, I have seen 30+ dB rejection of the driving waveform.

The other doubler is very similiar, but uses transistors instead of diodes. It also requires plenty of drive unless the transistors are biased on slightly. Then it is easy to drive. 0 dBm will drive it just fine. It also has good rejection of driving waveform. If you use dual transistors or at least two transistors on a single die (eg CA3028, or CA3049T) even greater driving waveform rejection can be had. Last night I saw about 45dB rejection of a 7MHz driving source while doubling to 14 MHz.

The transistor type doublers are usually shown with a resonant tank circuit in the collector circuit tuned to the 2x frequency. However I have found that the same circuit can operate well at a broadband doubler by substituiting a 50uH choke in the collector circuit. You must however at some point filter out all the harmonics except for the second. A great advantage of this circuit is that the odd harmonics are greatly suppressed thus there are 2 octaves of bandwidth between even harmonics which relaxes filering requirments.

Hope this helps. Oh yeah, also see: Accessories for your VFO, Jan 1988, QST.

Best wishes,

Roger Traylor

--
Roger Traylor
rlt@ssd.intel.com
Intel Corporation - Supercomputer Systems Division
Beaverton, OR 97006

399. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 18:13:17 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb18.181317.9408@ke4zv.atl.ga.us>
Source record: 118539

In article <56@ted.win.net> mjsilva@ted.win.net (Michael Silva) writes:
>It just occurred to me that I could finally get an answer to a
>question I've wondered about for a long time, namely:
>
>As homebrewers, what test equipment do you use in getting your
>projects working? Are you using 'scopes, freq. counters, signal
>generators, sweep generators, GDO's, spectrum analysers? Any other
>obvious things I've forgotten at 1AM? Comments?

Aside from my trusty Simpson 260, the most valuable piece of test
equipment I have is my IFR station monitor. It's several instruments
rolled into one. I also use a 4 ch 250 MHz Tek scope, an old Tek 491
10 MHz-40 GHz lab type spectrum analyzer, and of course a Bird wattmeter.
I also find a good step attenuator very handy.

Though I have a frequency counter (two in fact), I find I almost never
use them since the IFR can give me that information. I have four signal
generators, but the IFR duplicates the range of two of them, up to 1 GHz,
so those rarely see use. I've got a function generator that's used
ocasionally, but the IFR has that built in too. I do sweeping with my
Science Workshop spectrum analyzer with tracking generator. A newer
IFR would have that built in too. I think you can gather that I like
the IFR by now. :-)

But the best piece of test equipment is between my ears, a little bit
of common sense, and a whole lot of experience.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

400. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 18:59:20 UTC
From: spikes@sc.hp.com
Message-ID: <2k3368$oj7@hpscit.sc.hp.com>
Source record: 118540

Michael Silva (mjsilva@ted.win.NET) wrote:
: It just occurred to me that I could finally get an answer to a
: question I've wondered about for a long time, namely:

: As homebrewers, what test equipment do you use in getting your
: projects working? Are you using 'scopes, freq. counters, signal
: generators, sweep generators, GDO's, spectrum analysers? Any other
: obvious things I've forgotten at 1AM? Comments?

: If I get enough responses I'll tabulate them and post them.

: Thanks,

: Mike, KK6GM
:

All of the above and herds more. Most hams are not 'fortunate' enough
to repair and calibrate HP instruments for a living, though.

Your test equipment needs depend on your homebrew projects. For t-shooting
a pumpkin-light-flasher for halloween, a DVM would be enough. For trying
to get your 60 Ghz receiver (we do have a band up there somewhere?) working,
you'll need more equipment. Most 'common' stuff can be fixed with O'scope,
DVM, a signal source in the area of interest (borrow your buddies HT), a
receiver in the......(buddies HT again), and a couple of variable power
supplies. A small one, and big one for when you want to really weld something.

If you do lots of digital stuff, a signal injector or function generator,
and a signal tracer would be nice.

Maybe its been overlooked, but good tools, soldering iron, third hand,
work space, safety equipment, anti-static stuff, lighting, cables, test
leads, etc. all can turn a bench project into something enjoyable rather
than a chore.

Before I got divorced, a couple of the tools I valued most were my two
mechanical quality inspectors, ages less than 10. Except for dangerous
voltages and tools, these two made the whole project more interesting.
Parts all over the place. What I'm saying here is: by sharing a project
with say, another ham (with HT), you both can use your heads to complete
a project. Maybe a little off track here, but it takes anothers extra
motivation to bench race electrons at home after doing it at work all day!
You both learn and enjoy the project.

What is your next project, Mike?

Bill
wb6rzg

401. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-18 22:38:53 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <2k3g1t$c58@bronze.lcs.mit.edu>
Source record: 118541

Like the gentleman from Scotland, I too spend most of my time on the bench.

I own and can recommend these kinds of instruments:

DMM --Absolutely essential. Until I fried my handheld unit, I was also
using it for continuity tests. The Radio Shack models are OK.
If you have the room for a bench meter, look for the HP 3440 DMM with
plug-ins; it's an excellent value; I've found them for $10 or so at
the fleas, and they are wonderful!

That being said, *the* most used instrument on my bench is a continuity
tester that beeps according to the resistance across its leads; it was
a $2 special at Radio Shack and definitely the best $2 I spent. One
could do the same with a 555 and a few other parts.

Scope--Buy Tektronix. Period. I've owned three 500-series Tek scopes and
all of them have worked and even been in calibration! I'm using a 545
(30 MHz BW) presently.

Frequency counter, signal generator--I've a Systron/Donner counter that
doesn't work (yet!) and a Hickok 277 signal generator that does. The latter
is very useful and will be even more so once I get the counter working.

A word on broken test equipment at fleas: If the instrument is in otherwise
good shape (i.e. not crushed, CRT not busted), and it's offered at a cheap
price, don't be afraid to buy it. That's how I got most of my gear!
At worst, you can strip them for parts, perhaps even buying several units
to make up one good instrument. I love doing this sort of stuff, and I
get to learn something besides!

Other stuff--I've a HV probe (for TV servicing that I sometimes do); this
isn't as useful to the average ham. I do have a transistor tester, though
I superseded it with a signature analysis box hooked up to the scope.
If you do digital work (myself, very occasionally), you might want a logic
probe and pulser (I haven't used mine for years, but then again, tomorrow
I might need it. :))

...73's, Dave, N1KGH

--
| David Moisan, N1KGH /^_/^\ moisan@silver.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

402. Re: homebrew SSB xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 03:30:45 UTC
From: alanb@sr.hp.com
Message-ID: <CLGCFA.2IJ@srgenprp.sr.hp.com>
Source record: 118542

James G Larsen (jimla@tekig1.PEN.TEK.COM) wrote:

: Has anyone built a ladder filter for SSB using cheap crystals? My
: Digi-Key catalog has a wide selection from 3.579 MHz to 60 MHz for
: $1.00 - $1.50 each. How many crystals are needed for 30-40 dB sideband
: supression?

I have built CW filters, but not SSB filters. I found that my filter with
4 crystals gave better ultimate rejection (far from the center frequency)
than the 8-pole filter that came with the radio. Ultimate rejection is more
a function of shielding and grounding (to avoid leakage around the filter)
than of the number of crystals.

That may not answer your question, however, since sideband suppression
requires close-in rejection. I still bet you could get 30-40 dB with
4 poles.

AL N1AL

403. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 03:36:16 UTC
From: alanb@sr.hp.com
Message-ID: <CLGCoH.2pI@srgenprp.sr.hp.com>
Source record: 118543

Scott Dorsey (kludge@grissom.larc.nasa.gov) wrote:

: Personally I find digital oscilloscopes a pain in the neck for most things.
: For non-repetitive waveforms, and finding just that one pulse, they are
: wonderful, and for digital work they are very useful. For radio stuff,
: though, I'd rather just have a good storage scope, and good storage scopes
: turn up cheaply on the surplus market now and then.

Have you ever used an HP546XX-series scope? I, like you, was a dyed-in-the-wool digital oscilloscope hater until I used one of those. I liked it so much I bought one for home (at employee discount :=). They did a really great job of making it "look and feel" just like an analog scope while retaining the advantages of a digital scope.

AL N1AL
(No, I don't get a commission :=)

404. RF Power Amp stages, design. Help needed!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 04:32:01 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb19.123201.1@ntuvax.ntu.ac.sg>
Source record: 118544

Hi,

I'd like to know what considerations are required to modify an existing HF RF Power stage to a higher power without needing
to actually build a separate HF linear amp. Specifically I'd like to know if it is possible to drop a different transistor into
place and change the current limiting resistor of the final stage, provided the transistor is carefully selected, and get an
increased power output? What about the driver stage? Is the output of the driver stage critical as I see in the catalog, it appears
that some of these transistors come with a specified input power, eg: 0.1 watt in/ 15 watt out/ Ppe 23 dB. What exactly is the Ppe?
Another thing about transistor selection, will a VHF transistor work well in a HF circuit? For example, the specs above are for the
MRF 261 transistor which is actually a VHF transistor, will this work in a HF power stage then? More specifically I am trying to
modify the output of the ARK 20 QRP transceiver from about 3 watts to say 12-20 watts or so. How difficult will the change in
design be? The reason I am thinking of this is that I want to keep the QSK active rather than have a separate QSK TR switch for the
additional linear amp.

Tks for any advice.

73 de 9V Daniel

405. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 05:26:58 UTC
From: lkraft@core.rose.hp.com
Message-ID: <CLGHsy.Mp9@icon.rose.hp.com>
Source record: 118545

Alan Bloom (alanb@sr.hp.com) wrote:
: >
: > Have you ever used an HP546XX-series scope? I, like you, was a dyed-in-the-
: > wool digital oscilloscope hater until I used one of those. I liked it so
: > much I bought one for home (at employee discount :=). They did a really
: > great job of making it "look and feel" just like an analog scope while
: > retaining the advantages of a digital scope.
: >
: > AL N1AL
: > (No, I don't get a commission :=)
: >

Not only that, but you can get a plug-on module that lets the
54600/1 behave as a spectrum analyzer. Works best on steady-state
signals, but I've found it useful up through the tens of MHz range.
It's great for tweaking audio stuff.

For most lower frequency (<100MHz) stuff, it does a pretty good job
of measuring frequency, voltages, etc. I don't even own a good
multimeter but have been able to build and debug a few advanced
projects using the scope instead. And when you get bored it will
play Tetris! :-)

73,
L

==
Lyle Kraft AA6LK
########################## Hewlett-Packard
/_ _ ###### System Interconnect Lab -
/ / /_/ ##### Information Networks Division
/ ###### Roseville, CA 95747
########################## 916-785-5798
lkraft@core.rose.hp.com
==

406. WANTER: Phil Karn's KA9q functions in C

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 06:11:11 UTC
From: clark@kiwi.gen.nz
Message-ID: <22271.499420724@kiwi.gen.nz>
Source record: 118546
Cross-posted to: alt.sources.wanted,rec.radio.amateur.homebrew

gcouger@olesun.okstate.edu (Gordon Couger) writes:
: I want to control my Icom 735 with an msdos computer. I have Phil Karn's
: KA9q functions in C. But I can't find the first part of the 2 files to
: see how he made his contctions from the printer port to the Icom.

Would anyone out there have Phil Karn's _complete_ KA9q functions in C?
If they are not too massive, could they email them to me or tell me the name
of a site where they may be ftp'd? (Not that I have ftp access :-( )

Many thanks for any pointers and regards from down under... clark
--
Email: clark@kiwi.gen.nz (Clark R F Mills) ------------+------------------+
Voice: 64-25-935002 Disclaimer: All errors are | $ nice -20 work & |
Fax : 64-9-8494282 line niose! | $ exec games |
Snail: P O Box 47-195, Ponsonby, Auckland, New Zealand -+------------------+

407. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 07:13:48 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CLGMr2.8Br@iat.holonet.net>
Source record: 118547

mjsilva@ted.win.NET (Michael Silva) writes:

>It just occurred to me that I could finally get an answer to a
>question I've wondered about for a long time, namely:

>As homebrewers, what test equipment do you use in getting your
>projects working? Are you using 'scopes, freq. counters, signal
>generators, sweep generators, GDO's, spectrum analysers? Any other
>obvious things I've forgotten at 1AM? Comments?

>...

>Mike, KK6GM

Basic, basic here -- a scope (old tube Tek 533A), old Triplett FETVOM,
cheap digital multimeter I got for 4 bucks that had one resistor bad, an
old Eico grid-dip meter in poor shape.

and, of course, my Mac -- to access these groups, and to use my
spreadsheet full of formulas to calculate dBm, turns on toroids, etc.

John, K0JD

408. WANTER: Phil Karn's KA9q functions in C

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 08:50:39 UTC
From: clark@kiwi.gen.nz
Message-ID: <31839.49943761@kiwi.gen.nz>
Source record: 118548

gcouger@olesun.okstate.edu (Gordon Couger) writes:
: I want to control my Icom 735 with an msdos computer. I have Phil Karn's
: KA9q functions in C. But I can't find the first part of the 2 files to
: see how he made his contctions from the printer port to the Icom.

Would anyone out there have Phil Karn's _complete_ KA9q functions in C?
If they are not too massive, could they email them to me or tell me the name
of a site where they may be ftp'd? (Not that I have ftp access :-( )

Many thanks for any pointers and regards from down under... clark
--
Email: clark@kiwi.gen.nz (Clark R F Mills) ------------+------------------+
Voice: 64-25-935002 Disclaimer: All errors are | $ nice -20 work & |
Fax : 64-9-8494282 line niose! | $ exec games |
Snail: P O Box 47-195, Ponsonby, Auckland, New Zealand -+------------------+

409. Re: Motorola 1470A: can it be modified for 2meter band?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 16:18:15 UTC
From: arog@BIX.com
Message-ID: <arog.761674695@BIX.com>
Source record: 118549

angerhof@bambam.es.com (Norman Angerhofer) writes:

>I was recently given an old Motorola car phone, model 1470A. I opened up
>the massive electronics box (which weighs about 50 pounds) and found
>plug-in units which were labeled something like this: T - 158.520 R - 152.08.
>As there were 7 such units, I am guessing there are 7 channels available
>for the phone use.

>Can this unit be easily adapted to transmit and receive on the 2M band?

>Any opinions on this particular model, is it worth the trouble to try the
>modifications?

>--Norman AA7QG angerhof@dsd.es.com

>--
>Norman Angerhofer angerhof@dsd.es.com
>540 Arapeen Dr.
>SLC, UT 84108

That the radio has Channel Elements that are labeled for Transmit
and Receive says that it may well be worth the effort. Some models
for IMTS service used a single channel element for the transmit
freq the first IF was the same as the repeater split.

First is this a tube radio? If so, then it may well be of the
U43GGT vintage. If its solid state receive and tube transmit,
then its proly U43HHT.

Take a look at the labeling and see if it has an identifier
similar to those U = Universal, T = Trunk, F = Front mount
#1 = power, #2 = band, Receive.model, Transmit.model, Power.type
and then a string of four numbers for more info on the details
of the radio. As a full listing from a Mocom-70 (first radio
that I could grab...), its a T44BBA3000A SP1.
Oops. I forgot to mention that they sometimes stick another
rev designator (the A in 3000A) in. The SP means that its
SPecial somehow and SP1 means that its the first special hack.

SP means also that you need to keep your eyes open for
things that are different... somehow. Most often, these
are only modest problems... but some take some real.head.scratchin
to figure out and un-hack.

.....
Alan Ogden
W6SPK

Moderator of ham.radio @ BIX
arog@BIX.com

410. Homemade balun, unknown toroid material. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 17:26:46 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb20.012646.1@ntuvax.ntu.ac.sg>
Source record: 118550
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi,

I just made a 1:1 current balun for use at the feed point of my 20 meter dipole
fed from a RG-58. The problem us is that the toroid I used was unmarked so I do not know
the
actual effect of the "balun". Is there a way to test the balun? Or should I eliminate it
altogether. What kind of effect will the balun (with ot without) have on my transmission
and reception?

Tks.

73 de 9V Daniel

411. 20m QRP Xcvr kits. Recommendations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 17:32:24 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb20.013224.1@ntuvax.ntu.ac.sg>
Source record: 118551
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

I am looking to buy a 20 meter QRP kit. Can anyone recommend any good tranceiver kits? Does the kit have VXO? VFO? synthesized etc etc. Cost.

Tks.

73 de 9V Daniel

412. Re: Car power jack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 17:45:12 UTC
From: sltmw@cc.usu.edu
Message-ID: <1994Feb19.114512.11256@cc.usu.edu>
Source record: 118552

In article <761496309snx@skyld.grendel.com>, jangus@skyld.grendel.com (Jeffrey D. Angus) writes:
>
> In article <u*&@byu.edu> CROFTW@caedm.et.byu.edu writes:
>
> >
> > I want to build a car power adaptor (cigarette lighter type) for a kenwood
> > 28A. A friend of mine has one he bought that says it is filtered. Do I need
> > to do anything other than put a couple of capacitors in parallel with the 12V
> > leads??
> >
>
> The "store bought" plug in adaptors have a nice inductor in series with
> the DC supply to the HT. This serves two purposes, it eliminates the
> whine of an alternator system, and it stops any spikes from getting to
> the HT (When used with a large electrolytic at the HT side).
>

I didn't use this on my HT (or any of my ham rigs, better filtering I guess), but I had a portable stereo that I used the car battery to power. I had a real problem with alternator whine in the system. I found an old AM radio in the GoodWill store (I am amazed at what you can find to kludge parts from), and took the ferrite looopstick antenna out of it. Wrap as much wire as you can around it, (I used 14 gauge), and put SuperGlue over all the wraps. Makes a fairly high-power inductor. I have no idea what the inductance is, but after installing it in-line with the power lead, my o'scope didn't even show a ripple when I started the car....

Maybe that will help...I didn't put a cap in with it, I meant to, but was too pleased with the results I had....

73 es CUL

Daniel D Holmes " " - Marcel Marceau
Internet: SLTMW@CC.USU.EDU
AmprNet: N7NKR @ N7NKR.HOME.AMPR.ORG 44.40.1.43 [located in Salt Lake City]
N7NKR @ N7NKR.AMPR.ORG 44.40.12.10 [located in Logan]

413. JFET VFOs -- Diode needed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-19 22:51:40 UTC
From: mjsilva@ted.win.NET
Message-ID: <65@ted.win.net>
Source record: 118553

In the Febuary 1994 issue of QEX in an article on oscillator phase noise it is stated that the diode commonly placed between the gate of a JFET VFO and ground degrades the noise performance of the oscillator and does not improve the long-term stability. Any info or opinions on this?

Mike, KK6GM

414. Re: 20m QRP Xcvr kits. Recommendations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-20 01:25:55 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CLI1B7.G5t@news.Hawaii.Edu>
Source record: 118554
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Feb20.013224.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
>Hi,
>
> I am looking to buy a 20 meter QRP kit. Can anyone recommend any good
>tranceiver kits? Does the kit have VXO? VFO? synthesized etc etc. Cost.
>
> Tks.
>
>73 de 9V Daniel

Daniel: here's a reprint of the second project I posted on .homebrew.

Jeff NH6IL

****
Subject: Project 2 - 20 meter QRP CW xmtr

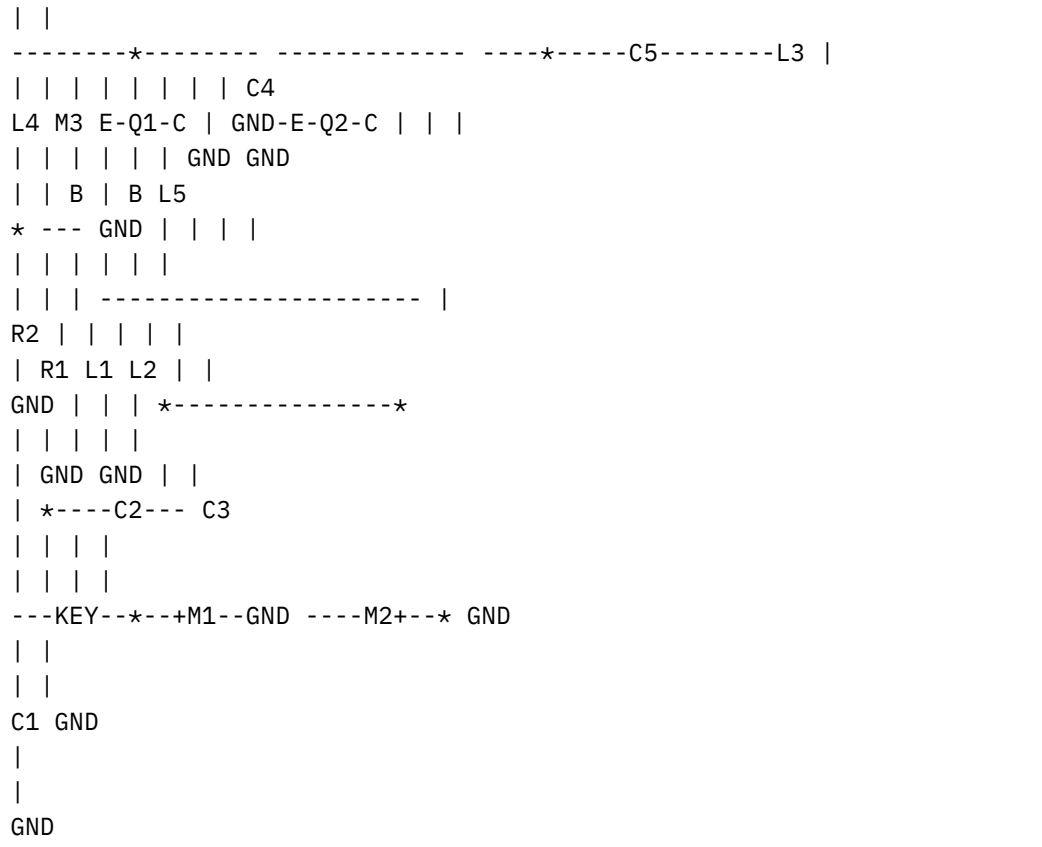
Here's the second QRP project taken from 101 EASY HAM RADIO PROJECTS,
by Robert Brown and Tom Kneitel; again, since the book is out of print,
I assume there will be no copyright problems...
This project is a simple 20 meter CW xmtr with output about 100 mw (?).
Here are the authors' comments:
"If you have always wanted to try low-power on 20 meters, here is an
excellent method for joining the growing ranks of flea-power addicts -
and doing it inexpensively. This circuit is capable of world-wide QSO's,
given the right conditions and assuming QRM is not present.
"The transmitter uses a pair of GE-1 universal replacement transistors
in a unique circuit configuration a great more sophisticated than you
would normally expect for an under-one-watt rig. Crystal can be a
fundamental 14-mHz type.
"L1 should be adjusted for sure-fire oscillation every time the
key is depressed. C4 is simply adjusted for maximum output on the FSM."

PARTS LIST:

C1, C2 .02 uF capacitors
C3, C5 .002 uF capacitors
C4 51 pF variable capacitor
L1 38 turns of No. 22 enameled wire on a 1/2 in. diameter
slug-tuned form
L2 8 turns of No. 22 enameled wire wound over cold end of L1
L3 Coil, 17 turns of Air Dux 616T (or equiv.) tapped 5 1/2
turns from cold end
L4, L5 2.5 mH rf choke (National R-100 or equiv.)
M1 1.5 volt dry cell

M2 6 volt battery
M3 14 mHz crystal
Q1, Q2 GE-1 transistors
R1 180 ohm resistor
R2 1.1 megohm resistor

As before, rather than trying to `draw' the symbol for each component, I've just inserted the part number. Oh, note the polarities of the batteries M1 and M2. GND = ground, ANT = antenna, E = emittor, ANT C = collector, B = base, KEY = well, this is a CW rig.... |



Note that the collector of Q1 `jumps' over the hot end of L2; this is the only jump. * = a junction of 3 or more leads.

.... .- ...- . ..-. ..- -. !

Jeff, NH6IL

Jeffrey Herman, University of Hawaii Mathematics, jherman@Hawaii.Edu

415. Re: One more question!!!!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-20 14:38:39 UTC
From: arog@BIX.com
Message-ID: <arog.761755119@BIX.com>
Source record: 118555

fsrla@aurora.alaska.edu writes:

>Thanks to all those who've replied to
>my posts....

>Getting conflicting reports on the wire
>for winding coils, though. So, let's
>apply this to my "real-life" situation, here.

>I'm building a simple (or so I thought)
>reciever for 15-Mhz. It calls for a
>coil with 26 turns of #24 enamel wire.
>I solved on problem, I've found the
>enameled wire! YAY! However, our radio
>shack only carries size #22 then goes to
>#26. No #24 at all, and quote the
>salesman, "We don't carry it 'cause
>it's, uhhh, to small." Exact quote, no fib!

>So, will either of these sizes work, what would
>I have to change? Or do I need to find a catalog
>for people who carry this?

>Thanks for the help!!!!!

>Roger Asbury WL7NT
>FSRLA@Aurora.alaska.edu

The inductance of a coil is a function of its length and
cross-section area for a constant number of turns.

If you keep the legth of the coil the same, then there will
be no impact on the impeadance by using wire that is two
wire-sizes smaller. There will be some small reduction in
its Q from the slightly higher resistance.

.....
Alan Ogden, w6spk
Moderator of ham.radio at BIX
arog@BIX.com

416. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-20 16:13:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb20.161304.17180@ke4zv.atl.ga.us>
Source record: 118556

In article <CLFFLF.G3v@hpqmoea.sqf.hp.com> dstock@hpqmoca.sqf.hp.com (David Stockton) writes:
> TDR (Time Domain Reflectometer) Well, it was on this stall at a
>rally, and the bloke wanted 35 pounds, it proved 100% working when I got
>it home. This device is best described as an in-cable radar set, used
>to test transmission lines and connectors. It fires a pulse down the
>line and plots a trace of reflection voltage versus time so you can
>measure exactly how bad a mismatch is, and measure just how far down the
>line it is. It's nice to know I've got one, should I ever need it, but I
>must confess I've not (yet) used it in anger. The name alone frightens
>people, they seem to always be sold at "for the parts" prices. If people
>stick pins in your co-ax, then you NEED one of these...

Use this *now* David. Take scope pictures of all your antennas while they're working. You can then pulse the line anytime you wonder if something has gone sour. If the traces don't match, it has. Otherwise you've saved yourself a trip up the tower.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

417. Re: Homemade balun, unknown toroid material. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-20 16:29:46 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Feb20.162946.17317@ke4zv.atl.ga.us>
Source record: 118557
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <1994Feb20.012646.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
> I just made a 1:1 current balun for use at the feed point of my 20 meter dipole
>fed from a RG-58. The problem us is that the toroid I used was unmarked so I do not know
the
>actual effect of the "balun". Is there a way to test the balun? Or should I eliminate it
>altogether. What kind of effect will the balun (with ot without) have on my transmission
>and reception?

A balun's purpose is to transform an unbalanced feed to a balanced load,
or vice versa. What it really buys you is keeping RF current off the shield
of coaxial feeders. This can distort your antenna pattern because the shield
of the coax acts as an additional unwanted radiating element.

How to test. You need a "sniffer" to detect currents on the outside of
the coax shield. A simple sniffer is a loop of wire soldered to a pilot
lamp. While transmitting, run the loop up and down the coax (loop plane
parallel to the coax). If the bulb lights, the balun isn't doing it's
job. You can make this more sensitive by using a loop tuned to the
transmitter frequency (series resonant). Electrically shielding the loop
will allow it to respond only to the H field from the coax.

In most cases, with simple dipoles, a balun is a waste of time and
money. Sometimes it helps, but those cases are so installation dependent
that on the air testing is the only real way to determine if it's doing
you any good. (Radiation from the coax can sometimes be *helpful* in
making contacts under certain conditions, like when the other station
is off the end of your dipole.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

418. Subscribe?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 00:22:50 UTC
From: ROHRWERK@holonet.NET
Message-ID: <199402210022.QAA28855@holonet.net>
Source record: 118558

Found this list via a crosspost to qrp@think.com. I'm interested! As this is the only address I have, could someone subscribe me or send me subscription info?

Thanks

John K0JD

---
* Freddie 1.2.5 * "Aaaaaahhhhhh.....Baaaaach!" -- Radar O'Reilly

419. Advice, please, re 12V Battery Supply in Shack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 00:51:26 UTC
From: emd@ham.almanac.bc.ca
Message-ID: <F9N3Hc1w165w@ham.almanac.bc.ca>
Source record: 118559

I'm planning to resurrect my ham shack this spring (other projects and illness have delayed it).

I have a number of items in the shack I want to power off a 12 V battery - including a VHF 10 W radio, a UHF 10 W radio, a small 12 V TV, a packet TNC and a desk lamp.

A separate 12 V battery will supply power to a TS-820S as backup for power failure, which happens fairly often around here. (Using the same battery for both purposes is out, as the 820 DC power supply puts a heavy ripple on the battery when in use).

The question is the best way to keep the battery adequately charged without over-charging it - I'm not sure merely connecting a DC power supply to the battery is a very good answer.

Suggestions as to the best method to both power the equipment AND keep the battery from deteriorating would be appreciated.

Tnx, Bob, VE7EMD

Robert Smits There is *no* idiotproof filter.
VE7EMD Idiots are proof against anything!
Ladysmith B.C. - Richard Chycoski, VE7CVS
e-mail: emd@ham.almanac.bc.ca

420. Re: Laser jammer wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 02:31:15 UTC
From: nagle@netcom.com
Message-ID: <nagleCLJz03.27B@netcom.com>
Source record: 118560

st3a5@jane.uh.edu (John, Dawn V) writes:
>Does anyone have any information regarding the building of speed-detector jamm-
>ers ? If so please post or send me message by email.
>Later,
>Dvj

This belongs in alt.rec.speeding.

John Nagle

421. Re: Advice, please, re 12V Battery Supply in Shack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 04:19:20 UTC
From: julian@bongo.tele.com
Message-ID: <1994Feb21.041920.5202@bongo.tele.com>
Source record: 118561

In article <F9N3Hc1w165w@ham.almanac.bc.ca> emd@ham.almanac.bc.ca writes:
>
Battery stuff:
>The question is the best way to keep the battery adequately charged
>without over-charging it - I'm not sure merely connecting a DC power
>supply to the battery is a very good answer.
>
>Suggestions as to the best method to both power the equipment AND keep
>the battery from deteriorating would be appreciated.

This whole subject was very well covered in a series of
articles in that evil cultist rag QST.

See "Practical Battery-Back-Up Power fro Amateur Radio
Stations - Part 1, 2, 3." March, April, May 1990.

Brian Kantor posted a good writeup on lead acid batteries on 28 May
1992. I have a copy and will mail it to the original poster or anyone
else who wants a copy.

--
Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

422. Re: Homemade balun, unknown toroid material. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 06:00:02 UTC
From: alanb@sr.hp.com
Message-ID: <CLK8o3.BIo@srgenprp.sr.hp.com>
Source record: 118562
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:

: I just made a 1:1 current balun for use at the feed point of my
: 20 meter dipole fed from a RG-58. The problem us is that the toroid
: I used was unmarked so I do not know the actual effect of the "balun".
: Is there a way to test the balun? Or should I eliminate it
: altogether. What kind of effect will the balun (with ot without)
: have on my transmission and reception?

I assume you made the balun by wrapping your coax a number of times
through the toroid core. You would get some balun action even if the
core had no magnetic properties whatever. In fact, some people
habitually make "air baluns" by simply winding several turns of coax
in a loop. I wouldn't worry too much about it -- it can't hurt and
it probably is giving you at least some balun action.

AL N1AL

423. Need mic wiring info for Icom W2A...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 08:05:28 UTC
From: linley@netcom.com
Message-ID: <linleyCLKEH4.7GM@netcom.com>
Source record: 118563

Could someone provide a wiring diagram for the combination speaker/mic jack on an Icom W2A HT? I don't see how they can fit a speaker, mic, and a PTT switch into a 3 terminal jack unless some trickery closes PTT when the mic key shorts the speaker line. Many thanks in advance.

--
Bruce James Robert Linley ---- linley@netcom.com ---- Amateur radio: KE6EQZ

424. Spreadsheets (was Re: What test equipment do you use?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 11:50:36 UTC
From: wmeahan@ef0424.efhd.ford.com
Message-ID: <wmeahan.79.000BD840@ef0424.efhd.ford.com>
Source record: 118469

In article <CLGMr2.8Br@iat.holonet.net> rohrwerk@orac.holonet.net (John Seboldt) writes:
[deletions]

>and, of course, my Mac -- to access these groups, and to use my
>spreadsheet full of formulas to calculate dBm, turns on toroids, etc.

>John, K0JD

In Excel? Care to share you spreadsheets with the community at large?
(Excel under Windows can use Mac Excel worksheets).

425. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 13:08:19 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CLKsHw.3JG@hpqmoea.sqf.hp.com>
Source record: 118564

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Use this *now* David. Take scope pictures of all your antennas while
: they're working. You can then pulse the line anytime you wonder if
: something has gone sour. If the traces don't match, it has. Otherwise
: you've saved yourself a trip up the tower.

: Gary

A very, very sound suggestion, but I'm in one of those ALL external antennae banned areas. My HF doublet is on a halliard, and the 2m thing is in the attic. I can get at all of them in under 2 minutes. The guys with the big rotating towers and the stacked monobanders *really* need a TDR.

Nice for checking cables, even if there is a corroded region away from the ends, this thing will spot them and measure their location.

Cheers
David

426. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 14:41:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <21FEB199409414816@pavo.concordia.ca>
Source record: 118565

In article <1994Feb20.161304.17180@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) writes...
>In article <CLFFLF.G3v@hpqmoea.sqf.hp.com> dstock@hpqmoca.sqf.hp.com (David Stockton) writes:
>> TDR (Time Domain Reflectometer) Well, it was on this stall at a
>>rally, and the bloke wanted 35 pounds, it proved 100% working when I got
>>it home. This device is best described as an in-cable radar set, used
>>to test transmission lines and connectors. It fires a pulse down the
>>line and plots a trace of reflection voltage versus time so you can
>>measure exactly how bad a mismatch is, and measure just how far down the
>>line it is. It's nice to know I've got one, should I ever need it, but I
>>must confess I've not (yet) used it in anger. The name alone frightens
>>people, they seem to always be sold at "for the parts" prices. If people
>>stick pins in your co-ax, then you NEED one of these...
>
>Use this *now* David. Take scope pictures of all your antennas while
>they're working. You can then pulse the line anytime you wonder if
>something has gone sour. If the traces don't match, it has. Otherwise
>you've saved yourself a trip up the tower.
>
Great idea. Anyone who wishes that they had such a piece of equipment can build one for next to nothing. The ARRL handbook page 27-31 (year 199?) has a great little circuit that works very well. One drawback is that for it too be useful for the lengths of coax that amateurs usually use (i.e. around 50ft) then you NEED a scope with a bandwidth of 50MHz or more.
Enjoy

-Mark Hillier Internet: MD_HILL@pavo.concordia.ca
Amateur: VE2HVW
PACKET: VE2HVW@VE2FKB
" I hear, I forget. I see, I remember. I do, I understand"

427. MOTOROLA MITREK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 16:41:03 UTC
From: sidener@crunch.nuc.umr.edu
Message-ID: <1994Feb21.164103.3538@umr.edu>
Source record: 118566

Does anyone have any experiance, hints or tips on converting a Motorola Mitrek VHF radio into a repeater?

I would appreciate any comments.

Thanks, N0WFL Scott Sidener sidener@crunch.nuc.umr.edu

428. Re: Help: I need a Z8 compiler!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 18:26:23 UTC
From: markz@ssc.com
Message-ID: <1994Feb21.182623.9231@ssc.com>
Source record: 118567

Adrian Godwin (agodwin@acorn.co.uk) wrote:
: In article <CL8BtA.LqC@eskimo.com> mzenier@eskimo.com (Mark Zenier) writes:
: >I wrote a family of cross assemblers and posted them to the
: >net several years ago. Z8 included.
: >If you have FTP capability, they are in
: >/pub/archives/alt.sources/Frankasm on keos.helsinki.fi.
:
: I know they're not strictly 8-bit processors, but have you considered
: doing flavours of frankasm for the Microchip PICs ?

Another of the C Users Group did one for the PIC1650. At the time
I did most of this, the PIC's were just another strange chip from the
microprocessor equivalent of the Precambrian era. I'm also not sure
that Intel Hex is the best output file format, and would cause a lot
of confusion for the users. And supporting a new output format would
mean a seperate version of the common code. No big deal as far as
how much time it would take, but the PIC's just don't fit in to the existing
assemblers. (Read this as: I coded myself into a corner ;-)).

Here's a list of the older cross-assemblers in the CUG library. This
is a couple of years old, but the newer additions are in the ad in
the C User's Journal magazine.

From: mzenier@polari.UUCP (Mark Zenier)
Newsgroups: comp.compilers
Subject: C Users Group Cross Assemblers (was Re: TI9900 assembler wanted)
Date: 20 Mar 91 05:04:10 GMT

In article <1991Mar17.153736.3409@cs.utk.edu> gathings@duncan.cs.utk.edu (Golando
Gathings) writes:
>Is there anyone out there that has a cross assembler for the
>Texas Instruments TI 9900 series microprocessor. It must be able to run
>on an IBM pc compatible. Any help gladly welcome.

>[Perhaps the Frankenstein assembler recently discussed has a TI9900 version.

Not me, but someone else did. Here is a list of all the cross assemblers
available from the C Users Group library.

(For a more offical order form, check for "The C Users Journal" at a
good computer oriented magazine stand.)

CUG148 Alexander Cameron
TI 9900/99105

CUG149 Will Colley
Motorola 6800, 6801
RCA 1802, 1805
Motorola 6805

CUG190 Steve Passe
Motorola 68000

CUG219 Will Colley
Intel 8048, 8049
Rockwell 6502
Rockwell 65c02

CUG242 Will Colley
Motorola 68hc11
Hitachi 301 (6301?)
Intel 8051

CUG261 Stuart Dole
Motorola 68000

CUG267 Will Colley
Intel 8080,8085
Signetics 2650
STM (SGS-Thomson) S6

CUG276 Will Colley
Zilog z80
Motorola 6804
General Instruments (Microchip) PIC1650

CUG292 Alan R. Baldwin
Motorola 6800
Motorola 6801
Motorola 6804
Motorola 6805
Motorola 6809
Motorola 6811
Intel 8085
Zilog z80(hd64180)

CUG316 H.G. Willers
Zilog Z8

CUG335 Mark Zenier
RCA 1802, 1805
Signetics 2650
Hitachi 6301
Mos Technology/Rockwell 6502, 65c02
Motorola 6800, 6801, 68hc11
Motorola 6805
Motorola 6809
TI TMS7000
Intel 8048, 8041

Intel 8051
Intel 8096
Zilog Z8
Zilog Z80, 64180

429. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 19:12:39 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2kb138$jrr@usenet.INS.CWRU.Edu>
Source record: 118468

In article <21FEB199409414816@pavo.concordia.ca>,
HILLIER, MARK D. <md_hill@pavo.concordia.ca> wrote:
>The ARRL handbook page 27-31 (year 199?) has a great little circuit
>that works very well.

Circuit Cellar Ink had a TDR project about a year ago. It was very
clever, using an 8051 and an LCD display. I don't think it provided
the full graph that a nice TDR provides. That means it couldn't give
you a picture of _all_ discontinuities.

Stephen

--
Stephen Trier KB8PWA "What's the human race going to do next?
Other: trier@ins.cwru.edu Grind up clarinets and smoke them?"
Home: sct@po.cwru.edu - narcotics agent Greg Elam,
quoted on Clarinet

430. Re: Laser jammer wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 21:11:04 UTC
From: dwalster@lincoln.gpsemi.com
Message-ID: <dwalster.80.00152F8A@lincoln.gpsemi.com>
Source record: 118470

nagle@netcom.com (John Nagle) writes:
> This belongs in alt.rec.speeding.

Is the .rec. short for reckless?

Dave.

431. Looking for Motorola VHF power transistor sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-21 23:10:25 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Feb21.231025.23402@ultb.isc.rit.edu>
Source record: 118471

I'm looking for some Motorola VHF power transistors (MRF240/A and others). The only catalog I found them in is from a company that is no longer in business. Any suggestions? I looked in the mailorder list from ftp.cs.buffalo.edu, but nothing looked promising.

73...Jim
N2VNO

432. Re: Laser jammer wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 09:29:08 UTC
From: jlwei@ArtSci.WuStL.EDU
Message-ID: <2kcj94$50m@bigfoot.wustl.edu>
Source record: 118472

Dave Walster (dwalster@lincoln.gpsemi.com) wrote:
: nagle@netcom.com (John Nagle) writes:
: > This belongs in alt.rec.speeding.

: Is the .rec. short for reckless?

: Dave.

maybe so, but what are the chances anybody *there* will know how to build
one?

jesse.

433. Re: Homemade balun, unknown toroid material. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 12:53:20 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Feb22.205320.1@ntuvax.ntu.ac.sg>
Source record: 118473
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <CLK8o3.BIo@srgenprp.sr.hp.com>, alanb@sr.hp.com (Alan Bloom) writes:
> asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:
>
> : I just made a 1:1 current balun for use at the feed point of my
> : 20 meter dipole fed from a RG-58. The problem us is that the toroid
> : I used was unmarked so I do not know the actual effect of the "balun".
> : Is there a way to test the balun? Or should I eliminate it
> : altogether. What kind of effect will the balun (with ot without)
> : have on my transmission and reception?
>
> I assume you made the balun by wrapping your coax a number of times
> through the toroid core. You would get some balun action even if the
> core had no magnetic properties whatever. In fact, some people
> habitually make "air baluns" by simply winding several turns of coax
> in a loop. I wouldn't worry too much about it -- it can't hurt and
> it probably is giving you at least some balun action.

No, actually I made the balun my making something like 4 or 5 bifilar turns
on a toroid originally used for power line filtering. What do you think of
this?

>
> AL N1AL

73 de 9V Daniel

>

434. Re: Subscribe?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 13:30:15 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2kd1d7$n9q@usenet.INS.CWRU.Edu>
Source record: 118474

In article <199402210022.QAA28855@holonet.net>, <ROHRWERK@holonet.NET> wrote:
>As this is the only address I have, could someone subscribe me or send me
>subscription info?

To get subcription information, send mail to majordomo@think.com
containing the single word "help" in the message body.

To subscribe, send mail to majordomo@think.com with the command
"subscribe qrp" or "subscribe qrp <prefered-address>" in the message
body. See the help for information on the second form.

Stephen

--
Stephen Trier KB8PWA "What's the human race going to do next?
Other: trier@ins.cwru.edu Grind up clarinets and smoke them?"
Home: sct@po.cwru.edu - narcotics agent Greg Elam,
quoted on Clarinet

435. Voltage Regulator questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 13:33:21 UTC
From: cravitma@cps.msu.edu
Message-ID: <2kd1j1$194g@msuinfo.cl.msu.edu>
Source record: 118475

Does anyone out there know the part number of the high-current version of the 7812? Or, alternatively, can someone suggest a similar part I can use? I am building a P.S. that will need to drop 14.8V down to 12V at around 4 A. The Radio Shack salesdroid I asked did not list anything in their database.

Alternately, since I know the standard (TO-220) 7812 can handle up to about 1.5A, would putting, say, 4 of them in parallel work?

Thanks.

/Matthew N9VWG

--
Matthew Cravit, N9VWG | All opinions expressed here are
Michigan State University | my own. I don't speak for MSU
East Lansing, MI 48825 | and they don't speak for me (luckily
E-Mail: cravitma@cps.msu.edu | for both of us).

436. Paralleling Power Diodes ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 15:39:35 UTC
From: drs@ccd.harris.com
Message-ID: <1994Feb22.153935.9921@ccd.harris.com>
Source record: 118476

I just obtained a pot full of 1N4007 diodes. They are 1KV @ 1A. I plan on using many of them for a bridge for a HV power supply. Since the supply is going to put out somewhere around 4KV, I will want to series a number of these guys to get enough piv for (since I am very conservative) around 8KV. Since they are rated at 1A, I am thinking that I want to parallel a few of these to get a good 3A rating. Anyboday see any problem with paralleling 3 of these diodes? I realize that the forward resistance may be different for them.

--

Doug Snowden
drs@ccd.harris.com
N4IJ

437. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 15:55:48 UTC
From: BEKIS@FSHVMFK1.VNET.IBM.COM
Message-ID: <199402221555.HAA23848@ucsd.edu>
Source record: 118477

UNSUBSCRIBE

438. Re: Looking for Motorola VHF power transistor sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 18:00:37 UTC
From: mjsilva@ted.win.NET
Message-ID: <73@ted.win.net>
Source record: 118478

>I'm looking for some Motorola VHF power transistors (MRF240/A and
>others). The only catalog I found them in is from a company that
>is no longer in business. Any suggestions? I looked in the
>mailorder list from ftp.cs.buffalo.edu, but nothing looked
>promising.

Both RF Parts in CA (1-800-737-2787) and Ocean State Electronics in
RI (1-800-866-6626) carry a full line of Motorola RF power
transistors, including the MRF240/A.

Mike, KK6GM

439. Re: Homemade balun, unknown toroid material. Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:09:34 UTC
From: alanb@sr.hp.com
Message-ID: <CLn6nz.BMo@srgenprp.sr.hp.com>
Source record: 118479
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:
: In article <CLK8o3.BIo@srgenprp.sr.hp.com>, alanb@sr.hp.com (Alan Bloom) writes:
: > asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:
: >
: > : I just made a 1:1 current balun for use at the feed point of my
: > : 20 meter dipole fed from a RG-58.
: >
: > I assume you made the balun by wrapping your coax a number of times
: > through the toroid core.

: No, actually I made the balun my making something like 4 or 5 bifilar turns
: on a toroid originally used for power line filtering. What do you think of
: this?

I would use coax. That way you are guaranteed a continuous 50-ohm
transmission line. (The two wires likely are not 50-ohm impedance.)
If the toroid doesn't work, then you are no worse off than if you had
just connected the coax directly to the antenna.

AL N1AL

440. DIY Audio Notch Filter ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:19:09 UTC
From: harland@otter.mech.ubc.ca
Message-ID: <2kdpbt$b34@nntp.ucs.ubc.ca>
Source record: 118480

Does anybody have plans for a DIY audio notch filter ?
Am I looking to build one that has both variable centre
frequency and bandwidth.

MFJ sell a unit that is just what I am looking for,
but the price is more than I am will to pay. In their
unit you can adjust both centre frequency and bandwidth
independently.

I have found a circuit that uses an OP-amp and three
resistors. The problem is that it is not possible to
vary the bandwith / centre frequency with out messing
up the other or the gain. I suppose this circuit may
work but it would not be very useable.

I am not a elecronics wiz but I have built circuits
in the past, so I am not afraid to give this a try.

thanks, Harland

--

Harland MacKenzie "Once you have eliminated
Department of Mechanical Engineering the impossible, what ever
University of Brithish Columbia remains, no matter how
Vancouver, B.C. Canada improbable, must be the
truth",
Internet: harland@mech.ubc.ca Sir Arthur Conan Doyle
CompuServe: 72162,2245
---

441. Re: Voltage Regulator questions

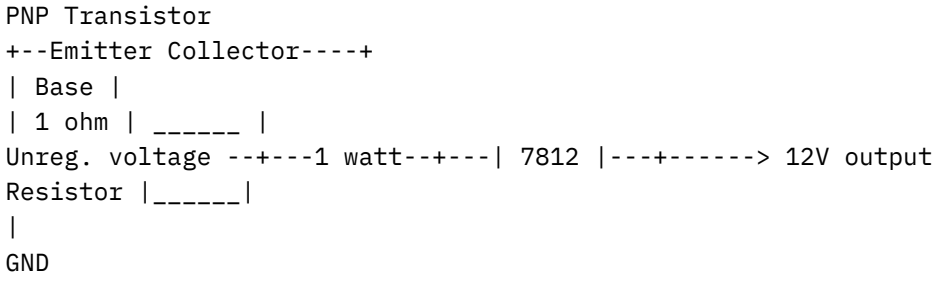
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:22:15 UTC
From: alanb@sr.hp.com
Message-ID: <CLn793.C1q@srgenprp.sr.hp.com>
Source record: 118481

Matthew B Cravit (cravitma@cps.msu.edu) wrote:
: Does anyone out there know the part number of the high-current version
: of the 7812? Or, alternatively, can someone suggest a similar part I
: can use? ...

: Alternately, since I know the standard (TO-220) 7812 can handle up to
: about 1.5A, would putting, say, 4 of them in parallel work?

Yes you can parallel them. I'd put a 0.1 ohm resistor in series with
each output to make sure they share the load fairly equally.

Another trick is to add a power transistor:



The 7812 only has to put out about .6A, the PNP power transistor
handles the rest. Don't forget the standard protection diode
from output (anode) to input (cathode).

AL N1AL

442. Re: Paralleling Power Diodes ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:27:29 UTC
From: alanb@sr.hp.com
Message-ID: <CLn7Ht.C79@srgenprp.sr.hp.com>
Source record: 118482

Marie-Louise DaBrusco (drs@ccd.harris.com) wrote:
: I just obtained a pot full of 1N4007 diodes. They are 1KV @ 1A. I plan on
: using many of them for a bridge for a HV power supply. Since the supply is
: going to put out somewhere around 4KV, I will want to series a number of
: these guys to get enough piv for (since I am very conservative) around 8KV.
: Since they are rated at 1A, I am thinking that I want to parallel a few of
: these to get a good 3A rating. Anyboday see any problem with paralleling 3
: of these diodes? I realize that the forward resistance may be different for
: them.

Wow, 3A at 4KV! And you're not even from California :=)

If all the diodes are from the same production lot, they should be
well-matched. Or you could run about 1/2 amp through each one and measure
the forward voltage and parallel them in matched sets. Unfortunately, as
one diode in the parallel group heats up, its forward voltage drops so
it sucks more current, so it heats up more, so... blam!

If you parallel diodes, be sure they are well-coupled thermally: Solder
them to a PC board with a pair of short, very fat traces connecting the
parallel diodes. I wouldn't count on 3A with 3 diodes using that technique,
but you should get something better than 1A.

AL N1AL

443. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:52:43 UTC
From: nick@cs.unc.edu
Message-ID: <2kdrarlNNbo8@altairhp.cs.unc.edu>
Source record: 118483

A friend once posted the following above his workbench:

" It's a damn poor job that doesn't require at least one new tool. "

444. >Valvo GmbH

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 20:59:09 UTC
From: arnim@actrix.gen.nz
Message-ID: <CLn8yM.31s@actrix.gen.nz>
Source record: 118484

ucgapam@ucl.ac.uk (Patrick Martin) writes
> BFW60D and BFR35A
> ...made by a company called Valvo ...

Valvo is a Philips company and these parts, if they are not obsolete,
will be available from Philips or their distribution network.

Valvo is based in Hamburg, if that helps.

Good Luck,
Arnim. arnim@digitech.co.nz

445. How about VHF MOSFET's for 2-meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-22 21:52:24 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Feb22.215224.22050@ultb.isc.rit.edu>
Source record: 118485

What are the advantages/disadvantages of RF power MOSFET's? From what the listing shows, they have more gain than bipolars. Are there any "gotchyas"? How does efficiency compare? They are listed for 28 or 50 volt supplies. How much power can you get at 12 volts? The 1994 ARRL handbook doesn't seem to cover any of this.

73...Jim
N2VNO

446. Re: Advice, please, re 12V Battery Supply in Shack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-23 02:55:42 UTC
From: emd@ham.almanac.bc.ca
Message-ID: <JBJ7Hc3w165w@ham.almanac.bc.ca>
Source record: 118486

julian@bongo.tele.com (Julian Macassey) writes:

> In article <F9N3Hc1w165w@ham.almanac.bc.ca> emd@ham.almanac.bc.ca writes:
> >
> Battery stuff:
> >The question is the best way to keep the battery adequately charged
> >without over-charging it - I'm not sure merely connecting a DC power
> >supply to the battery is a very good answer.
> >
> >Suggestions as to the best method to both power the equipment AND keep
> >the battery from deteriorating would be appreciated.
>
>
> This whole subject was very well covered in a series of
> articles in that evil cultist rag QST.
>
> See "Practical Battery-Back-Up Power fro Amateur Radio
> Stations - Part 1, 2, 3." March, April, May 1990.
>
> Brian Kantor posted a good writeup on lead acid batteries on 28 May
> 1992. I have a copy and will mail it to the original poster or anyone
> else who wants a copy.
>

Thanks for the material, Julian. Interesting and useful.

(posting this because e-mail to you bounced)

Tnx and 73, Bob.

Robert Smits There is *no* idiotproof filter.
VE7EMD Idiots are proof against anything!
Ladysmith B.C. - Richard Chycoski, VE7CVS
e-mail: emd@ham.almanac.bc.ca

447. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-23 11:25:36 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CLoD2o.uJ@hpqmoea.sqf.hp.com>
Source record: 118487

Using pulse generators with scopes, or the published DIY versions is all OK, but the thing I got has over 1 GHz of bandwidth, and can discriminate very small distances (millimetre). At 35 quid it was cheaper than you would likely find either a scope or a pulse gen at a rally or at a surplus store.

I've also got most (but not all) of a 12 GHz combined sampling scope and TDR, but see no real use in the shack for it. Bought a scope frame with this plugged into it, for less than the going rate for the frame alone. TDRs really seem to confuse people... maybe the seller didn't realise the frame was more useful and valuable than the plug-in?

I use TDRs professionally to debug mismatches etc, and to develop broadband transformers (there is rather a good set of HP applications notes...) but nowadays I more often use a network analyser with a mathematically computed TDR function when I'd like to see the time response rather than mag&phase versus freq.

Everyone seems to know the TEK scope families around here, but no-one seems to know the old HP180 family, so I keep picking up odd bits at absolute bargain prices, and I have a bit of an inside track on knowing my way around them. Typically a 50MHz dual trace dual timebase with a reasonably bright CRT capable of very fine focus for under $100 ! The only problem is that the trigger circuit requires canny adjustment to get it to work at its best.

Cheers
David

448. How to measure low power @ VHF & above.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-23 17:41:40 UTC
From: andyw@aspen32.cray.com
Message-ID: <1994Feb23.114141.8053@hemlock.cray.com>
Source record: 118488

Anyone have any favourite methods for measuring VHF/UHF
power in the 1 - 10 mW range ? I can't just go out and
buy a bolometer, so what do people suggest ?

FWIW, I have two immediate applications, one is connecting
a transverter to a TS-711A, the other is measuring the output
power of a small UHF oscillator & amplifier.

I have a spectrum analyser, but it's not directly calibrated, I
can measure differences using the IF attenuator, though..
--
andyw N0REN/G1XRL

andyw@aspen.cray.com Andy Warner, Cray Research, Inc. (612) 683-5835

449. Re: How about VHF MOSFET's for 2-meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-23 20:30:42 UTC
From: alanb@sr.hp.com
Message-ID: <CLp2B8.43J@srgenprp.sr.hp.com>
Source record: 118489

Elendir (elendir@enst.fr) wrote:
: J.D. Cronin (jdc3538@ultb.isc.rit.edu) wrote:

: : What are the advantages/disadvantages of RF power MOSFET's? From what
: : the listing shows, they have more gain than bipolars. Are there any
: : "gotchyas"? How does efficiency compare? They are listed for 28 or
: : 50 volt supplies. How much power can you get at 12 volts? The 1994
: : ARRL handbook doesn't seem to cover any of this.

: Well. The first advantage of a MOSFET is its high input impedance.

That's true at low frequencies, but power MOSFETs have high input
capacitance, so the impedance is actually quite low at VHF frequencies.

: It doesn't really sucks much power from the previous stage.

Again, that's true at low frequencies, but not so true at VHF. Even if
you can tune out the input capacitance, it is hard to do that without
losses in the matching network, not to mention that the FET input
impedance becomes lossy at those frequencies.

: Their input
: impedance is essentially capacitive. They are more stable than bipolar.
: They exhibit only quadratic distorsion, thus a push pull stage made up
: with MOSFET can be really linear.

They are quadratic only when operated in the "linear" region (class A).
As soon as you bias them into class AB or beyond, they have lots of
odd-order distortion. Hi-fi amplifiers can afford to waste power
with class-A operation in order to get low distortion, but you generally
don't want (or need) to do that with an RF amp.

: MOSFET also tend to dissipate less power than BJT, and to have a higher
: bandwidth. Their output impedance varies less with frequency.

What is true of MOSFETs is that they don't have the secondary breakdown
problem of bipolars, so it's easier to avoid blowing them up.
Also they are easier to run in parallel, since the on-resistance has
a positive temperature characteristic (opposite of the saturation
voltage of bipolars.) And of course, at lower frequencies (HF range)
they really do take less drive power if tuned properly.

AL N1AL

450. Re: How about VHF MOSFET's for 2-meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-23 23:21:08 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2kgod4$i1@hpscit.sc.hp.com>
Source record: 118490

In article <CLp2B8.43J@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>: : What are the advantages/disadvantages of RF power MOSFET's? From what
>
>What is true of MOSFETs is that they don't have the secondary breakdown
>problem of bipolars, so it's easier to avoid blowing them up.
>Also they are easier to run in parallel, since the on-resistance has
>a positive temperature characteristic (opposite of the saturation

There is a well-known form of oscillation that can take place when
power MOSFET's are paralleled. Be sure to install ferrite beads on
the gate leads to avoid this problem.

Rick N6RK
rkarlqu@scd.hp.com

451. Where is Dan's Small Parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 00:44:52 UTC
From: mjsilva@ted.win.NET
Message-ID: <83@ted.win.net>
Source record: 118491

I have been told that Dan's Small Parts etc is a good source for homebrewing, but I have two addresses for him. One I got from Homebrew Digest, v93, #8, which is in Montana. The other is from last November's Popular Electronics article on parts suppliers, which lists him as KA7QJY Components in Wyoming (Looked up call and found it was Dan Stevig). Does anyone know which of these addresses is current?

Also, I understand there is a list of parts suppliers somewhere on the net. Can someone point me to it?

Thanks,

Mike, KK6GM

452. Forming inductors out of PCB traces question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 02:02:29 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Feb24.020229.619@ultb.isc.rit.edu>
Source record: 118492
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I once saw a RF modulator that used PC board traces for the inductor
in its tuned circuit; they were in a spiral pattern. Is this a good
method for forming inductors? Does capacitance to a ground plane
layer mess things up? I'd like to form a lowpass filter, so stray
capacitance to ground may not be a really bad thing..

Also, how does one compute inductance? The ARRL Handbook gives a
formula for inductance of a coil where (coil length) > (.4 * coil diameter).
In this case we are working in a flat plane, so coil length = 0.
Also, coil diameter is not constant with a spiral inductor.

Any suggestions, ideas or references to books/articles are appreciated.

73...Jim
N2VNO

453. where to get xtal sockets?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 02:15:22 UTC
From: daved@autodesk.com
Message-ID: <2kh2jq$3a1@autodesk.autodesk.com>
Source record: 118493

I'm building a QRP 3-bander from the ARRL Handbook, and have
everything I need except for sockets for the crystals, which I
can't find anywhere! Can anyone point me to a source for PC-mount
HC-49U (the small size crystals) sockets, or sell me four or five?
I'd really appreciate it!

Thanks,
Dave KD6LSA

454. Re: Advice, please, re 12V Battery Supply in Shack

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 03:16:56 UTC
From: jlundgr@eis.calstate.edu
Message-ID: <2kh678$9ed@eis.calstate.edu>
Source record: 118494

I've seen guys try the battery chargers that are supposed to monitor the battery voltage and stop charging when the voltage gets to a certain point. These chargers are for batteries in boats, etc. It seems that just don't work. So I took a lamp timer and plugged the charger into it, and set it for four or six hours. It reduces the charger's tendency to overcharge. If the battery gets a little on the low voltage side, just add a few hours to the charging time. The other thing I would consider is swapping the battery periodically with one in an auto.

--
Fortune cookie/Tagline for the week: Funny -- only sensible people agree with me. Reality-ometer [\.....] Hmmph! Thought so...
Two rights don't make a wrong, they make an airplane.
Geek Code: GAT d-- p-@ c++(++++) l? u? e+/* m++(*) s !n h+/(*) f g+ w+ t++ t- y-(*)

455. Looking for sources of ferrite rod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 04:12:13 UTC
From: wrmed@mr.net
Message-ID: <19416.wrmed@mr.net>
Source record: 118495
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I am looking for ferrite rod for winding antennas, making inductors, etc.

Since this is for a production quantity application, I would prefer
a reliable source who might stock various sizes and shapes of ferrite
rods, cores, and so forth.

Anyone out there in the ether happen to have a name and number of a
supplier of such items?

Please e-mail replies. If people are interested in what I find out, I will
post a summary.

Thanks in advance,

Paul J. Anderson - N0RIK
Stillwater, MN
pja@wrmed.com
wrmed@mr.net
n0rik@wb0gdb.stp.mn.usa

456. Re: Looking for sources of ferrite rod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 14:00:59 UTC
From: kludge@grissom.larc.nasa.gov
Message-ID: <2kibur$96b@reznor.larc.nasa.gov>
Source record: 118496
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <19416.wrmed@mr.net> <pja@wrmed.com> writes:
>
>I am looking for ferrite rod for winding antennas, making inductors, etc.

Open up an IBM PC power supply, and you'll find a couple small chokes wound around ferrite rods. The material used is optimized for the 100 KHz region and tends to be a bit lossy at HF, but it's okay.

On top of this, you get some nice film capacitors, a bunch of electrolytics, some good switching transistors, and two 200V electrolytics with very large values.

Your local PC repair place is probably throwing several power supplies in the trash, because they aren't worth the money to repair when they fail. Absolute parts goldmines.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

457. Re: How to measure low power @ VHF & above.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 15:22:07 UTC
From: glenne@sad.hp.com
Message-ID: <CLqIow.Cqq@srgenprp.sr.hp.com>
Source record: 118497

Andy Warner (andyw@aspen32.cray.com) wrote:

: Anyone have any favourite methods for measuring VHF/UHF
: power in the 1 - 10 mW range ? I can't just go out and
: buy a bolometer, so what do people suggest ?

Andy,
The lowball method I use is a calibrated Schottkey diode detector.
See my HR Mag microwave station design series from 1988 for a circuit
and calibration curve; June '88 (Page 23). While it works at the levels you
mention, this method is limited in range and suffers from error if the
signal is not sinusoidal (large harmonic content, for example).
If your analyzer is functional and only uncalibrated, it is no doubt very
worthwhile to get it going since it offers a lot more information beyond
power. If +-1 dB sort of accuracy isn't enough for you, you might
consider building your own power meter. There's an interesting construction
article in Dececmber 1977 HR Mag (page 38) by WA4ZRP. He uses small (grain
of wheat size) lamps and seems to get reasonable performance to 500 MHz.

73

Glenn Elmore n6gn

ax.25 n6gn@wx3k.#nocal.ca.usa.na
amateur IP: glenn@SantaRosa.ampr.org
Internet: glenne@sr.hp.com

458. CRYSTAL SOCKETS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-24 20:23:17 UTC
From: dick@kanga.demon.co.uk
Message-ID: <762121397snz@kanga.demon.co.uk>
Source record: 118498

Hi gang,
I have a supply of crystal sockets
for HC49 crystals, $1 each plus
$2 per package for US posting.
$$$ bills only to..
Dick Pascoe
Seaview, Crete Road East
FOLKESTONE CT18 7EG. UK.

459. Re: Ham-Homebrew Digest V94 #42

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 13:46:04 UTC
From: bapplega@isd.CSc.COM
Message-ID: <9402251346.AA03688@isd.csc.com>
Source record: 118499

You can probably buy the crystal sockets from Petersen Radio. I've gotten HC-6 sockets from them in the past. They advertise in the back of QST and have responded very quickly to every order I've placed with them. 712-323-7539.

460. Re: Challenge: Cheapest (least expensive) homebrew 2m voice rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 16:35:17 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <1994Feb25.163517.18834@osuunx.ucc.okstate.edu>
Source record: 118500

For a low cost fm reciver a Signetics 604 looks very good over the same range uisng 4 resistors, 8 capacitors, 1 tank curcuit and a ceramic IF filter and has audio and data outputs. It would also need a couple of stages of audio gain. As I recall the chip is also in the $5.00 range.

Gordon AB5Dg

Gordon Couger
Biosystems & Agricultural Engineering
Oklahoma State University
114 Ag Hall, Stillwater, OK 74074
gcouger@olesun.agen.okstate.edu 405-744-9763 day 624-2855 evenings
I do not speak for my employer

461. My List of Mail Order Electronics Companies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 16:44:07 UTC
From: jfw@ksr.com
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A real prompt update for once; check the end for the changes (as usual).

[$Revision: 2.16 $; last updated Feb 25, 1994]

Here is my list of companies which will sell electronic components in
small quantities. Most of these places I have bought from, a couple
I haven't. Being a ham radio operator, I am most interested in
RF components, and in particular, air variable capacitors, which tend to be
scarce (and tend to be used or surplus even if I've otherwise labelled the
seller as "NEW"). I apologize in advance for disparaging remarks about
what happens when parts suppliers start selling computers, but anyone who
has watched Jameco over the years will know just what I mean (though
their latest catalog hints at possibly returning to selling parts).

Categories are:
NEW COMPONENTS Distributors and sellers of new components, or "new and some
used" in a couple of cases.
SURPLUS ELECTRONICS Usually overstocks, occasionally used equipment.
Ideal for stocking the junkbox, usually have dependable stock lines
of resistors, capacitors, and some semiconductors, but won't have
those LCD modules forever... An invaluable resource, don't shy away
from them.
SPECIALTY COMPONENTS In particular, crystals and toroidal cores.
KITS Ham radio kits, random electronic kits, whatever they have.
LITTLE GUYS Separated out because of some twisted sentimentality,
I suppose. Intended to honor one or two ham spare-bedroom
operations. Note that sending $1 along with catalog requests
is a big help for these folks.
PUBLICATIONS Two publications which are essentially all want-ads, plus
the address for SAMS PHOTOFACTS because everyone always asks about
it on sci.electronics.

Note on shipping costs: I don't always update these frequently enough, and
they're generally for continental US unless otherwise mentioned.

NEW COMPONENTS:

Ocean State Electronics
P.O. Box 1458
Westerly RI 02891
+1-800-866-6626 (orders)
+1-401-596-3080
+1-401-596-3590 (FAX)
Minimum $5, S&H $4, free catalog. Wide array of RF parts, especially
air variables and B&W coils.

Radiokit (store is located at:)
P.O.Box 973 169 Jeremy Hill Rd.
Pelham NH 03076 Pelham NH 03076
+1-603-635-2235
+1-603-635-2943 (FAX)
No minimum ($3 service charge if under $20), many kits, lots of J. W. Miller chokes & coils, B&W coils, RF switches, Millen variable capacitors, lots of parts in general. As of 24-Feb-94, they are again STILL out of catalogs, and just barely might have one by Dayton this year. They do accept mail orders, but you'll have to call for prices and availability. A classified ad in 3/94 QST says "Call/SASE", I guess they may have fliers.

Circuit Specialists Inc
P. O. Box 3047
Scottsdale AZ 85271-3047
+1-800-528-1417
No minimum with check or money order, $15 otherwise. $3 S&H.
New electronics, good RF assortment, increasing infestation of computers.

Mouser Electronics Mouser Electronics Mouser Electronics
11433 Woodside Ave. 2401 Highway 287 North 12 Emery Ave.
Santee CA 92071 Mansfield TX 76063 Randolf NJ 07869
Mouser Electronics
370 Tomkins Court
Gilroy CA 95020
Catalog Subscriptions: (800) 992-9943 (Continental US only)
Sales & Service: (800) 34-MOUSER (800-346-6873) (US, Puerto R., Canada)
Very complete catalog of brand-new components (though no air variables). Usually quick service, $20 "minimum" ($5 charge under $20). When ordering, you may want to be sure to ask about availability and shipping locations; they have several warehouses, and frequently orders will get sent from several warehouses (which drives up the shipping costs). Export orders have a $100 minimum, except for Canada and Mexico.

Digi-Key
701 Brooks Ave. South
P.O.Box 677
Thief River Falls, MN 56701-0677
+1-800-DIGI-KEY (334-4539)
+1-218-681-3380 (FAX)
No minimum, $5 handling under $25, free and very complete catalog, very nice indeed. Prices aren't always the best, but rarely excessive. Weak on RF specialty parts (though they now have the ever-popular NE602N), but they do have blue LEDs.

Active Electronics
11 Cummings Park 237 Hymus Blvd
Woburn MA 01801 Pointe Claire, Quebec, H9R 5C7
+1-800-677-8899 (Main number for US and Canada)
+1-514-630-7410 (International)
+1-514-697-8112 (FAX)
$25 minimum, $5 S&H UPS, catalog has a "$10 Suggested retail price" but they

sent mine for free. They have 8 stores in the US (Santa Clara CA; Chicago IL; Baltimore MD; Woburn MA; Detroit MI; Mt. Laurel NJ; Long Island NY; Seattle WA) and 10 stores in Canada (Quebec City; Montreal (2); Ottawa; Mississuaga; Winnipeg; Calgary; Toronto; Edmonton; Vancouver BC). Each store has its own 800 number and FAX number, call the main number(s). International orders are to be mailed to the Canadian address, but they want payment in US funds! Lots of stuff, oriented more toward supplying last-minute requirements of companies than hobbyists, but perfectly happy to take your money in small doses (stores have no minimum order). The $25 minimum for certain items is no longer explicit, but they note that some items will "ship in factory minimum package quantities", which might be worse.

Maplin Electronics Ltd.,
P.O. Box 3,
Rayleigh,
Essex,
SS6 8LR
U.K.
Phone numbers: your international code +44 702 554161 for sales
+44 702 553935 Fax
+44 702 556001 Tech enquiries(2-4pmGMT)
"Over here [in the United Kingdom] the main hobbyist electronics supplier is Maplin Electronics who stock a wide variety of equipment. They have a catalogue which can be shipped for 10.65 pounds sterling by air or 5.50 pounds sterling by surface mail. They accept Mastercard, American Express and International Reply Coupons. They have at least one type of air-filled variable capacitor!" (Thanks to Kev White at Cambridge University).

Newark Electronics
Send catalog requests to:
Newark Electronics
ATTENTION CATALOG DEPARTMENT
4801 N. Ravenswood Ave.
Chicago IL 60640-4496
+1-312-784-5100
They don't have a single mail address or phone; instead, one is supposed to call the closest of three pages worth of branch offices. I don't feel like typing in the entire list (it's copyrighted, anyway :-), so send email for your "local" distributor, or call their administrative offices at the number above. They have a $25 minimum order; they are a Real Distributor, but accept small orders (over the minimum, of course). Their catalog currently 1248 pages; they are very complete (except, of course, for my favorite scarce item, the air-variable capacitor). Note that the catalog prices tend not to match reality all that often, so order by phone rather than by mail; prices tend to be higher than other places, but they have a lot of things that are hard to find from other outlets. Also note that they have six Canadian offices, and one UK office, and will take international orders at 500 N. Pulaski St., Chicago IL 60624-1019, +1-312-784-5100
(FAX +1-312-638-7652, TLX 6718690 NEWARK U).

Arrow Electronics, Inc. Catalog requests to:
Catalog Division Catalog Division
1860 Smithtown Ave. 25 Hub Drive
Ronkonkoma NY 11779 Melville NY 11747-9828
+1-800-93-ARROW
Minimum $25; they no longer have a catalog. They are a Real Distributor, but also didn't mind my placing a personal order (a couple of years ago).

MCM Electronics
650 Congress Park Drive
Centerville OH 45459-4072
+1-800-543-4330
+1-800-824-TECH (product questions)
+1-513-434-6959 (FAX)
Minimum $20 ($25 for charge cards, and they don't take personal checks), handling $1.95 + shipping. Oriented toward repair technicians, really heavy on VCR parts and somewhat overpriced doodads, lots of useful stuff not easily found elsewhere.

Fordham Radio Supply
260 Motor Parkway
Hauppauge NY 11788-5134
+1-800-695-4848
Tools for technicians. One or two items are not outrageously overpriced.

Jameco
1355 Shoreway Road
Belmost CA 94002
+1-800-831-4242
+1-800-237-6948 (FAX)
+1-415-592-8097
$30 minimum order (was $50), >$5 shipping & handling. Their most recent catalog may have reversed a long trend of abandoning parts in favor of PC compatibles, or it may not; one can always hope.

JDR Microdevices
2233 Samaritan Drive
San Jose CA 95124
Orders: +1-800-538-5000
+1-408-559-1200
FAX: +1-800-538-5005
+1-408-559-0250
Cust. Service: +1-800-538-5001
Tech Support: +1-800-538-5002
BBS: +1-408-559-0253

No minimum, $5+ shipping. Mostly computers now, but they haven't yet decided to abandon components; indeed, they recently dropped their minimum order requirement entirely.

Johnson Shop Products
P.O.Box 160113
Cupertino CA 95016

+1-408-257-8614
+1-408-253-6288 (FAX)
Catalog $1. No minimum. Shipping charge is based on UPS; very small orders that can be sensibly shipped in a first-class letter, include money for first-class postage. New and some used electronic parts.

DC Electronics
P. O. Box 3203
Scottsdale AZ 85271-3203
+1-800-423-0070 (orders)
+1-602-945-7736 (stock/price checks)
+1-602-994-1707 (FAX)
$15 minimum charge order, no minimum for checks, $3 min. shipping&handling. Wide array of ICs, good assortment of electronic components.

EasyTech Inc *** out of business? ***
2917 Bayview Drive
Fremont CA 94538-9932
11 May 93: "EasyTech no longer has an 800 number, and has dropped several lines. The last time I called them (2 months ago), I got the impression they were slowly going down the tubes..." - dts@banyan.com "Both of their 800 number and the customer services numbers are disconnected, and no new numbers are given." - lau@gandalf.rutgers.edu

International Components Corporation
1803 NW Lincoln Way
Toledo OR 97391-1014
+1-800-325-0101 (US & Canada)
+1-503-336-4400 (FAX)
Cabinets&Enclosures; Capacitors; Diodes; ICs; Potentiometers; Resistors; Sockets; Transistors; Books. No minimum order, $2 handling under $25.

Kelvin Electronics
7 Fairchild Ave.
Plainview NY 11803
+1-800-645-9212
+1-516-349-7620
+1-516-349-7830 (FAX)
Minimum order $20; S&H 5% of order ($5 minimum, extra for large stuff, overnight, export (like to Hawaii :-), and etchant; based on UPS charges). Lots of electronic parts & tools, some robotics supplies, model rockets.

H & R Company (Herbach and Rademan)
18 Canal Street, P.O.Box 122
Bristol PA 19007-0122
+1-800-848-8001 (Orders)
+1-215-788-5583
+1-215-788-9577 (FAX)
Minimum order $25 ($5 processing charge under $25), shipping $4.75 under $30; Most items are new overstocks, much regularly stocked stuff as well. Tools, electrical supplies, motors, mechanical components, robotic components.

SURPLUS ELECTRONICS:

All Electronics Corp.
P. O. Box 567
Van Nuys CA 91408-0567
+1-800-826-5432
+1-818-904-0524
+1-828-781-2653 (FAX)
$10 minimum, $4.00 S&H. New and surplus electronics.

Alltronics
2300 Zanker Road
San Jose CA 95131
+1-408-943-9773
+1-408-943-9776 FAX
Surplus electronics. $12 minimum, shipping per UPS.

American Science and Surplus (formerly JerryCo)
P.O. Box 48838
Niles IL 60714-0838 ### New address.
+1-708-475-8440
+1-708-864-1589 FAX
Surplus. *The* surplus place. Lots and lots of surplus. WWII gun cameras,
velcro, laser disk chassis, 6 volt VW wipers motors, LEDs, rubber brains,
you name it, they've had it. Catalogs are a really good time.
$12.50 minimum order (which includes the $4 shipping charge).

BCD Electro ### Out of the mail order business!
P. O. Box 450207
Garland TX 75045-0207
+1-214-343-1770
According to Barrie Britton (24 Feb 94), BCD has gone out of the mail order
business.

Fair Radio Sales
P. O. Box 1105
1016 E Eureka St.
Lima OH 45802
+1-419-227-6573
Surplus electronics. Heavy on parts for old Collins gear.

Hosfelt Electronics
2700 Sunset Blvd.
Steubenville OH 43952
+1-800-524-6464
+1-614-264-5414 (FAX)
No minimum, $3.75 S&H. Surplus electronics.

HSC Electronic Supply (Halted Specialties Co.)
3500 Ryder Street
Santa Clara, CA 95051
+1-800-4-HALTED Orders only
+1-408-732-1573 inside California and outside US

Surplus (new) electronics; new and used test equipment. Minimum order $10
($2 handling charge under $20), plus UPS shipping cost. Has three stores,
of which 3500 Ryder Street is one.

Marlin P. Jones & Assoc.
P.O. Box 12685
Lake Park FL 33403-0685
+1-407-848-8236
+1-407-844-8764 (FAX)
No minimum ($1 fee for under $10), shipping per UPS. Surplus electronics.

R&D Electronics
1224 Prospect Ave.
Cleveland OH 44115
orders: +1-800-642-1123 (tues - fri 9am-4pm sat. 9am-3pm EST)
info: +1-216-621-1121
fax: +1-216-621-8628
$10 minimum. Surplus electronics.
"Also known to stock many components, but this is not discussed in the catalog.
Local store, a cleveland institution, is called Electronic Surplus, Inc., and
has been there since '48. Third generation now runs it." -- wb8foz

Surplus Sales of Nebraska
1502 Jones Street
Omaha, Nebraska 68102
+1-402-346-4750
+1-402-346-2939 (FAX)
New and surplus radio electronics. Wide selection: air variables.
Catalog $3 (free with order, refundable with $25 catalog purchase).

Tucker Surplus Store
1717 Reserve St.
Garland TX 75042
+1-800-527-4642 extension 135
Surplus electronic gear; oscilloscopes and signal generators from the days
when dinosaurs with vacuum tubes roamed the earth (some solid state gear, but
all well used). Prices seem relatively high, and you'll be shocked to learn
how much it costs to ship a 75 pound oscilloscope by motor freight...
[Steve Brown, N8HFI:
In defense of Tucker, the have a broad selection, repair facilities, and
they certify the used equipment to meet the original specification and
warranty it for 90 days. Not every source does this:]

Davilyn Corp.
13406 Saticoy St.
North Hollywood, CA 91605-3475
+1-800-235-6222 (Ex. CA)
+1-818-787-3334 (CA)
+1-818-787-4732 (FAX)
Surplus electronic gear.
[has much better prices [than Tucker], but sells used equipment as-is. -N8HFI]

SPECIALTY COMPONENTS:

JAN Crystals
2341 Crystal Drive
P.O. Box 06017
Fort Myers FL 33906-6017
+1-800-JAN-XTAL (Monday through Thursday)
+1-813-936-3750 (FAX)
+1-813-936-2397 (plant)
They make crystals. Minimum order is $10, which might be one crystal, or might be two.

Crystek Corporation
2351/2371 Crystal Drive
P.O. Box 06135
Fort Myers FL 33906-6135
+1-800-237-3061 (M-F) (US and Canada but not Alaska and Hawaii)
+1-813-936-2109
+1-813-939-4226 (FAX)
They make crystals too. They were the cheapest last time I ordered, but I don't have an up-to-date price list. It took about 4 weeks, and they had said it would take 6.

ICM (International Crystal Manufacturing Co., Inc.)
701 W. Sheridan
PO Box 26330
Oklahoma City OK 73126-0330
+1-800-426-9825
More crystals. They were more expensive, but they have lots of pre-made crystals for various rigs, so they would probably be faster.

Amidon Associates
2216 East Gladwick Street
Dominiguez Hills, CA 90220
+1-213-763-5770
+1-213-763-2250 (FAX)
Toroid cores and related things. Very fast service. Now takes MC/Visa and phone orders.

Palomar Engineers
Box 455
Escondido CA 92033
+1-619-747-3343
Toroid cores and shielding beads.

RF PARTS
435 South Pacific Street
San Marcos CA 92069
+1-800-RF-PARTS (Orders only)
+1-619-744-0700 (main order line & delivery info)
+1-619-744-0750 (customer service, warranty, tech & applications, 10AM-4PM)
+1-619-744-1943 (FAX)
Tubes and transistors. $2 handling below $20 for US orders; $5.50 minimum

handling for Canada orders; they take foreign orders (but no handling info was given in the QST ad).

K2AW's Silicon Alley
175 Friends Lane
Westbury NY 11590
+1-516-334-7024
Free catalog, $10 minimum order. Semiconductors, in particular high-voltage diodes.

Small Parts, Inc. [New address and phone, 23 Dec 91]
13980 NW 58th Court
P.O. Box 4650
Miami Lakes, FL 33014-0650
+1-305-557-8222 Order department
+1-305-557-7955 Customer Service (ask for Mirta)
+1-305-558-1255 Catalog (ask for Elizabeth)
+1-305-557-8004 Custom-made Parts (ask for Ziggy)
+1-305-557-8005 Non-standard Sizes
of catalog parts (ask for Eric)
+1-800-423-9009 Toll free FAX line
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets, tools, wire-size drill bits (as in #61 size for PC board holes).

KITS:
(The terse "Note:" descriptions are from the ARRL Kit List courteously supplied by Ed Hare and Mike Gruber at the ARRL. For a much more complete list of kit suppliers, use the ARRL email server; send the following as the text of a mail message:

help
index
quit

to the address info@arrl.org)

624 Kits
171 Springlake Drive
Spartanburg SC 29302
QRP kits (including some designs from W1FB's books) and some parts.

A&A Engineering
2521 W. LaPalma, Unit K
Anaheim CA 92801
+1-714-952-2114
Kits, some components, some books. S&H $4.50, catalog is free with SASE (2 oz postage).

Antique Electronic Supply
6221 S. Maple Ave.
Tempe, AZ 85283
+1-602-820-5411
Note: Broadcast receiver kits

C.M. Howes Communications
Eydon, Daventry,
Northants NN11 6PT
England
Phone: +44 327 60178
QRP, transmitters, receivers, misc. "The Heathkit of England", though with assembly manuals not as detailed, also without the intricate mechanicals of Heathkits.
[Carried by Townsend Electronics (at least) in the US]

Communications Concepts Inc.
508 Millstone Drive
Beaver Creek, OH 45434
+1-513-426-8600
+1-513-429-3811 (FAX)
kits for Motorola Applications Notes (amplifiers and the like), small assortment of components (chip capacitors, transistors). $4 Shipping&Handling.

Down East Microwave
Box 2310, RR#1
Troy, ME 04987
+1-207-948-3741
+1-207-948-5157 (FAX)
(Bill Olson, W3HQT) Microwave antennas and equipment, including kits for transverters and amplifiers. Free catalog available.

FAR Circuits
18N640 Field Court
Dundee IL 60118
Printed circuit boards for articles in the usual ham magazines. SASE for list. $1.50 shipping and handling per four boards.

Hamtronics, Inc.
65 Moul Road
Hilton, NY 14468-9535
+1-716-392-9430
Note: Amateur, general interest

Kanga Products # See also Kanga US below
Seaview House, Crete Road East
Folkestone CT18 7EG UNITED KINGDOM
Tel/Fax 0303-891106
QRP Kits, components. SAE (6"x9") for catalog.

John Langner WB2OSZ
115 Stedman St.
Chelmsford, MA 01824-1823
+1-508-256 6907
Slow Scan Television for IBM PC.

Lake Electronics
7 Middleton Close
Nuthall

Nottingham NG16 1BX
England
Note: Amateur

Mercury Systems
15 Lakeside Dr.
Marlton, NJ 08053
+1-609-596-3304
Note: the ARRL Kit list didn't say what they carry; I don't (yet) know
either.

Penntek Electronics
14 Peace Dr.
Lewistown, PA 17044
+1-717-248-2507
Note: The Neophyte Receiver, QST

Ramsey Electronics
793 Canning Parkway
Victor NY 14564
+1-716-924-4560
Amateur radio and hobby kits. The ham kits are all pretty simple and
pretty inexpensive, and you get about what you pay for. Their new
VHF transceiver kits (144, 220, 440) look pretty interesting. Many have
complained about the quality of their kits, though.

Tejas RF Technology
P.O.Box 720331
Houston TX 77272-0331
+1-713-879-9300
+1-713-879-9494 (FAX)
Tejas Backpacker-II QRP kit and other things.

Townsend Electronics, Inc.
Box 415
133 N. 1st Street
Pierceton IN 46562
+1-800-944-3661 (US only)
+1-219-594-3661
+1-219-594-5580 (FAX)
C. M. Howes Communications kits. Radio mounts. RSGB and ARRL publications.
$1 for catalog. $4 shipping & handling.

{See also RadioKit, Oak Hills Research}

LITTLE GUYS:

Oak Hills Research
20879 Madison St.
Big Rapids, MI 49307
+1-800-842-3748
+1-616-796-0920
+1-616-796-6633 (FAX)

Send $1 for a flyer. Some parts, QST article kits, transceiver kits,
QRP stuff in general (they inherited the stock from Small Parts Center
when they closed).

Dan's Small Parts And Kits (Formerly KA7QJY Components)
1935 S. 3rd W. #1
Missoula MT 59801
+1-406-543-2872
Send a business-size SASE for a current list of parts. RF parts, including
vernier drives and air variables; now also offers kits. $3.75 shipping,
no minimum. Fast service, lots of satisfied customers.

Kanga US
Bill Kelsey
3521 Spring Lake Dr.
Findlay, OH 45840
+1-419-423-5643
call between 7 - 11 pm eastern time please. stamp for a catalog.
"I import kits from Kanga in the UK - most of them come from
SPRAT - the journal of the G-QRP Club. I also have the Super Tee Antenna
Tuner, and a range of kits from Elktronics that are based on the DDS
articles in 73 Magazine."

R&R Associates
3106 Glendon Avenue
Los Angeles, CA 90034
+1-213-474-1315 (res)
[Richard Rathburn, KB6NQ] "I mainly sell pc boards from QST, Radio
Electronics, etc., and a few of in-house design. I also sell IC's, etc."
Send a SASE every now and then for his most recent flyer. He also has boards
for some Motorola Application Notes. (Jan 94 -- a member of the QRP mailing
list reports some dissatisfaction with R&R.)

CW Technology
7328 Timbercreek Court
Reynoldsburg, OH 43068-1181
COD Orders at 800-547-7479
"I have a small (just me) mail order company through which I sell kits.
My starter products were kits for computer<->transceiver interfaces to go
along with my 2/93 QST article. Since, I have added a programmer kit for
the MC68HC705K1 microcontroller and an optoisolated stepper motor controller
kit. I also sell the PCBs and difficult parts for these projects."
- Wally Blackburn AA8DX

MANUALS:
Eico Electronic Instruments Co., Inc.
363 Merrick Rd
Lynbrook NY 11563
Note: No current kits, EICO manuals and schematics only

PUBLICATIONS:

NUTS & VOLTS MAGAZINE
430 Princeland Court
Corona CA 91719-9938
+1-800-783-4624 (subscriptions)
+1-714-371-3052 (subscribe by FAX)
All advertisements magazine (though they've just publishing small projects). Issues are $2.00 (at least, that's the price on the cover), subscriptions are (third class mail, USA:) $17/1 year, $31/2 years, (first class mail USA) $34/1 year, (Canada/Mexico) US$35, (other foreign, air mail) US$70, (other foreign, surface) US$39. A subscription also entitles you to one free classified ad of 40 words.

Ham Trader Yellow Sheets
PO Box 15142
Seattle WA 98115
"SUBSCRIPTIONS: U.S.: 24 Issues(1 yr) $16.50 50 Issues(2 yrs + 2 issues) $32. 75(3 Yrs + 3) $48. CANADA & MEXICO: 24/$20. 50/$39. 75/$58. FOREIGN: $38 a year sent Airmail. Published 2 ISSUES A MONTH sent 1st Class Mail... NO LONG WAIT FOR AD CIRCULATE! NOTE: A $4/4 issue MINI-SUBSCRIPTION may be ordered by potential subscribers, or WITH AN AD to qualify for the Special Subscriber Ad Rates given below:" Non-subscriber ads $1/{word,number,group} per insertion; subscribers: businesses or other for-profit sales $0.75 per word; ads involving items solely from or for your own use $0.35 a word; hamfest ads $0.35. Ads and ads with subscriptions should be sent to POB 10253 Sarasota FL 34278 during the winter; spring through fall they go to POBox 2057, Glen Ellyn IL 60138.

Howard W. Sams & Company
P.O. Box 7092
Indianapolis, IN 26207-7092
+1-800-428-SAMS
Publishers of SAMS PHOTOFACTS and many other electronics books. There is an Annual Index of SAMS PHOTOFACTS whose cost I have forgotten. In-print Photofacts run between $14.95 to $39.95 (for computer Photofacts); they will photocopy out-of-print Photofacts for $11.95 + $2.50S&H for one page, plus $.55 per page thereafter.

RF Design Magazine
P O Box 1077
Skokie IL 60076-9931
+1-312-762-2193
A magazine for professional RF designers. Subscriptions are $38 per year in the US, $48 in Mexico and Canada, $51 elsewhere, unless you appear to be a "qualified subscriber" (i.e. are in serious danger of convincing your company to buy a $12,000 spectum analyzer based on an ad) in which case it's free. Heavy on theory, and even the advertisement articles are educational.

Electronics Now (formerly Radio Electronics)
Subscription Service
P.O. Box 51866
Boulder CO 80321-1866
+1-800-999-7139

A magazine for thumb-fingered electronics hobbyists. Subscription rate on the bingo card in the November issue (the latest I was able to dig up) was $19.97 per year.

Popular Electronics
Subscription Department
P.O.Box 338
Mt. Morris, IL 61054-9935
+1-800-827-0383
Like Electronics Now. $18.95 according to the latest bingo card I see.

The Computer Applications Journal (Circuit Cellar INK)
P. O. Box 3050
Southeastern, PA 19398-9932
+1-203-872-2204 (FAX)
This magazine is what Steve Ciarcia wanted BYTE to be when it grew up. It focuses on microcontroller applications and other digital projects.
$21.95 per year (12 issues, now) (Canada, Mexico: add $10 surface mail, $20 air mail; other countries: add $28.)

The Radio Craftsman
P.O. Box 3682
Lawrence, KS 66046-0682
Bi-monthly newsletter for homebrewers of amateur radio gear.
Information about electronics construction techniques, components, book reviews, beginning electronics theory, and the occasional construction project. Oriented toward the beginner/intermediate level. Price, $10/year (six issues), $15 outside the U.S. Published by Doug Heacock, AA0MS. Send large SASE for free sample issue.
[Info supplied by Doug Heacock.]

NOTES:

This file, and many others, are available for anonymous ftp from ftp.cs.buffalo.edu. It is also available from another anonymous ftp site, toxicwaste.mit.edu:/pub/archive/sci.electronics/Mail_Order_Companies. (Contact warlord@athena.mit.edu to offer things to the latter)

CHANGES FOR $Revision: 2.16 $

Add Kanga US, Kanga UK, RF Parts.
BCD Electro out of the mail order business.
Add CW Technology.

462. Re: Challenge: Cheapest (least expensive) homeb

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 17:31:57 UTC
From: dadams@cray.com
Message-ID: <1994Feb25.113157.19203@hemlock.cray.com>
Source record: 118501

I am not ready to get into this contest myself, but only because I
am trying to move the project to 220 instead of 2 meters. Now that
the FCC has opened the entire 220 band to the Novice class license
I think it is the perfect opportunity to get my sons interested in
working toward their first license.

Motorola makes a few chips with an entire low power dual conversion
FM receiver on a chip (the MC3363 or the MC13135 or the MC3362 etc.)
and another chip the MC2833 a low power FM Transmitter system. Each
of these require a few external parts, but only a minimal few. Order
data sheets MC2833/D, MC3363/D, MC13135/D, and Winter 1992 Communications
Quarterly reprint article. Also Application note AN980/D contains
instructions, board layout etc., for a 256 Channel Frequency Synthesized
Two Meter Amateur Band Receiver. The other documentes describe other
circuits/projects.

I got the boards and set of chips free.

I dunno, maybe I should try it first on 2 m just to make sure I can do it.

In article 6jg@u.cc.utah.edu, val@cs.weber.edu (Val Kartchner) writes:
> Here is a challenge for those in homebrew-land:
>
> What is the lowest cost voice amateur transceiver that can be homebrewed?
>
> Other parameters to consider are:
>
> - It should be from parts that are easy to get (Junk box, Radio Shack,
> etc.), or are easy to build (air-core coils, etc.).
>
> - It only needs to get a clear signal about 5 miles (in a residential
> zone - lots of low-level obstacles), but 10 miles would be better.
>
> - It may transvert the signal to a very low power transmission (for
> reception in the same room) in the AM or FM broadcast bands (if this
> is legal) for signal decode/output. (The separate AM/FM radio
> should be listed but not included in the cost estimate.)
>
> - It may be crystal tuned to one or few frequencies.
>
> - If it cannot run off of a personal computer power supply, then include
> the power supply price as well. (If it cannot run off of +12V @ 2A,
> then it is probably overpowered for this application anyway.)
>
> - Cost of a simple antenna should be included. (Coat hangers can

> be considered as being free.)
>
> - It should be as small as possible, but need not be a handheld.
>
> 73 -- KB7VBF
> --
> |================= #include <stddisclaimer.h> ================///=============|
> | "AMIGA: The computer for the creative mind" (tm) Commodore /// Weber State |
> | "Macintosh: The computer for the rest of us"(tm) Apple \\\/// University |
> |== "I think, therefore I AMiga" -- val@csulx.weber.edu ==\///= Ogden UT USA =|

Sourdough and Ham AA0PV

--David C. Adams internet: dadams@cray.com
Statistician uunet: uunet!cray!dadams
Cray Research Inc. packet: kg0io@tcman.#msp.mn.usa.noam

"The significant problems we face cannot be solved
at the same level of thinking we were at when we
created them." -- Albert Einstein.

463. S-Band converter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 18:12:22 UTC
From: "emi.3m.com": <>;
Message-ID: <2klf26$olr@dawn.mmm.com>
Source record: 118502

Does anyone have a proven design for an S-Band (1691-1708 MHz) to
2 meter (144-148 MHz) converter?

No mater where you go, there you are!

Cheers & 73 KA0TUT

464. Re: Voltage Regulator questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 23:42:15 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470002@hpcss01.cup.hp.com>
Source record: 118503

National Semiconductor
LM196K or LM396K
10 AMP
1.25 to 15V adjustable

LM138K or LM338K is 5 Amp version

these are not cheap but work well (use a big heat sink)

465. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 23:55:20 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470003@hpcss01.cup.hp.com>
Source record: 118504

```
Scopes:
tek 535 545
hp 180
philips

generators:
hp200
hp215?
military URM26 URM26

sweepers
1-4
4-8
8-12 GHz
hp

Hickok tube tester

LCR meter - 2

spectrum analyzer
AIL757 (to 22ghz)

counter
hp5345l
hp???? (solid state)

DVM
5.5 digit and down

7 digit voltage calibrator

pulse generator
hp211
EH

scalar
hp8755

power meter
hp
wavetek 8542 (I designed this one)

power supplies
hp
home built
```

466. Re: What test equipment do you use?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-25 23:56:19 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470004@hpcss01.cup.hp.com>
Source record: 118505

I must have forgotten some...

I like the test equipment more than the projects. Anyother
test equipement junkies out there?

467. Remote Controll Device

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-27 01:41:13 UTC
From: jolson@micromed.com
Message-ID: <eJuDic1w165w@micromed.com>
Source record: 118507

I'm working on a project which requires a signal to transmit about 100 ft. or so. All the sinal needs to be is a pulse or a steady tone in which it will send a high output into my circuit which will then activate a device of mine. If anyone could provide a scematic Digagram on how to build on of these, I would appreciate this very much...Also if someone cannot answer this, could refer me to a book which would cover projects of a similar nature....Thanx,

_____ ____
/ / / / | Internet:
/ _____ ____ /___ /___/ ___ _/_ | JOlson@micromed.com
/ ___ / / / / / /__/ / |
/ _____ /___ / / / / / / /_ | PROUD GSAUG MEMBER!

--
jolson@micromed.com (Jason Olson)

468. Re: Challenge: Cheapest (least expensive) homeb

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-27 05:12:21 UTC
From: mbutts@netcom.com
Message-ID: <mbuttsCLvAGM.AKD@netcom.com>
Source record: 118508

dadams@cray.com (David Adams) writes:

>I am not ready to get into this contest myself, but only because I
>am trying to move the project to 220 instead of 2 meters. Now that
>the FCC has opened the entire 220 band to the Novice class license
>I think it is the perfect opportunity to get my sons interested in
>working toward their first license.

Back in the mid-1960's Novices could run phone (AM in those days)
on 145-147 MHz. The Heath Twoer was a cheap (for then) and simple
kit rig that was very popular. I and quite a few of my teenaged
friends got started on hamming this way. 2 meters may be too
crowded most places for that today, but it would sure be nice
if a cheap simple rig like this could recreate those times for
today's kids.

73 de KC7IT

--
Mike Butts, Portland, Oregon mbutts@netcom.com

469. Re: Forming inductors out of PCB traces question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-27 09:50:05 UTC
From: samiam@netcom.com
Message-ID: <samiamCLvnBH.62D@netcom.com>
Source record: 118509
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:

>I once saw a RF modulator that used PC board traces for the inductor
>in its tuned circuit; they were in a spiral pattern. Is this a good
>method for forming inductors? Does capacitance to a ground plane
>layer mess things up? I'd like to form a lowpass filter, so stray
>capacitance to ground may not be a really bad thing..

>Also, how does one compute inductance? The ARRL Handbook gives a
>formula for inductance of a coil where (coil length) > (.4 * coil diameter).
>In this case we are working in a flat plane, so coil length = 0.
>Also, coil diameter is not constant with a spiral inductor.

>Any suggestions, ideas or references to books/articles are appreciated.

>73...Jim
>N2VNO

Perhaps my own bias, but in IC layout there is much discussion of L calculation
for traces. That's where I would look. Note that many PCB oriented books
treat L of traces as strictly parasitic.

[sam]

--
Scott A. Moore [SAM] | OS/2: Better half an os than none at all !
samiam@netcom.com | SEGMENTATION: is great for bamboo.
San Jose, CA USA | FUZZY LOGIC: is already, sadly, in wide use.
408-383-9154 |
---

470. Re: Forming inductors out of PCB traces question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-27 16:24:41 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Feb27.162441.40133@yuma>
Source record: 118510
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <samiamCLvnBH.62D@netcom.com> samiam@netcom.com (Scott Moore) writes:
>jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
>>I once saw a RF modulator that used PC board traces for the inductor
>>in its tuned circuit; they were in a spiral pattern.
>>I'd like to form a lowpass filter, so stray
>>capacitance to ground may not be a really bad thing..
>>Also, coil diameter is not constant with a spiral inductor.
>
>>Any suggestions, ideas or references to books/articles are appreciated.
>>73...Jim
>>N2VNO
>Perhaps my own bias, but in IC layout there is much discussion of L calculation
>for traces. That's where I would look. Note that many PCB oriented books
>treat L of traces as strictly parasitic.
> [sam]

Yer readin' the wrong books.
Try the ARRL UHF/Microwave Experimenters' Manual. Nice treatment of
MICROSTRIP elements. If you want more theory, back up a chapter to the end
of transmission media. They don't get into complex configurations like
spirals, but there is a long list of references for further reading.
galen, KF0YJ

471. linear amp??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-27 22:14:57 UTC
From: jjessie@csd4.csd.uwm.edu
Message-ID: <2kr611INN6sr@uwm.edu>
Source record: 118511

does anybody have any plans for a 30-150 (preferably 100) watt linear amp??
thanks,
scott jessie

472. Re: Looking for Motorola VHF power transistor sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 00:04:18 UTC
From: kbrune@vern.bga.com
Message-ID: <2krce3$2f9@giga.bga.com>
Source record: 118512

J.D. Cronin (jdc3538@ultb.isc.rit.edu) wrote:

: I'm looking for some Motorola VHF power transistors (MRF240/A and
: others). The only catalog I found them in is from a company that
: is no longer in business. Any suggestions? I looked in the
: mailorder list from ftp.cs.buffalo.edu, but nothing looked
: promising.

: 73...Jim
: N2VNO

Jim, Newark Electronics has it for $25 they have offices all over here is
the Washington State # 1-800-321-8984....Ken WL7IR

473. Re: linear amp??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 00:31:04 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Feb28.003104.27219@yuma>
Source record: 118513

In article <2kr611INN6sr@uwm.edu> jjessie@csd4.csd.uwm.edu (Joyce K Jessie) writes:
>does anybody have any plans for a 30-150 (preferably 100) watt linear amp??
>scott jessie

What Frequencies?
Get a catalog from Communication Concepts Inc. 513-426-8600 They'll have
kits, circuit boards, transistors, transformers....

474. Want to obtain a very cheap high gain antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 07:42:20 UTC
From: rsutton@congo.EECS.Berkeley.EDU
Message-ID: <2ks78s$o5b@agate.berkeley.edu>
Source record: 118514

Has anyone a sugestiong for a very cheap highly directional
2M antenna?

Homemade Yagi?

Homemade Dish? (Do hams uses dish on 2M)?

If you have references, please share them.

Thanks for any help,
Roy

475. Impedance matching prob.-AM carr. current

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 10:40:24 UTC
From: changm@land.cs.ucdavis.edu
Message-ID: <CLxKBD.CH6@ucdavis.edu>
Source record: 118515

My friend has built an AM carrier-current broadcast band transmitter for the community college he teaches at. He is having trouble trying to match the vacuum tube output stage of the transmitter to the AC power line. Any hints or suggestions?

Mark.

changm@land.cs.ucdavis.edu

476. Looking for a keyboard for a HaL Telereader

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 14:05:19 UTC
From: "Paul J. Anderson" <wrmed@mr.net>
Message-ID: <17772.wrmed@mr.net>
Source record: 118516
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

My dad has had a HaL Telereader for years (decodes CW, RTTY, etc). The keyboard encoder has partially failed (one row of keys doesn't work).

We traced the problem to the encoder and called HaL. They don't make it any more. I called the manufacturer of the chip (used to be General Instruments, now is MicroChip), any they said they don't make it anymore.

We did discover that a "standard parallel keyboard" will work. Looking at the schematic, it looks like uses 8 bits of data, a strobe, and an ACK line.

I could make a serial -> parallel converter and use an IBM style keyboard, but I would rather pick up another Telereader or parallel keyboard.

Hints?

Paul Anderson - N0RIK
Stillwater, MN
pja@wrmed.com

ps. Thanks to all who responded to my request for vendors of ferrite rod. I will post a summary of my experiences after I have had a chance get some product from some of the sources.

477. 50uA Meters - Help from Dayton?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 16:53:17 UTC
From: groverc@gvgadg.gvg.tek.com
Message-ID: <8414@gold.gvg.tek.com>
Source record: 118517

I am in need of two small (<1.75") 50uA movement meters to finish a
project. Since I live in the boondocks I wonder if anyone can help
me find such items. Perhaps someone going to Dayton would be willing
to look for me? Any help very much appreciated.
By the way, I have looked in all the "regular" catalog sources
to no avail. I think that these are going to be swap meet items.

73

Grover
WT6P

478. Re: 50uA Meters - Help from Dayton?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 19:24:39 UTC
From: zlau@arrl.org
Message-ID: <1994Feb28.192439.8852@arrl.org>
Source record: 118418

Ocean State Electornics 1-800-866-6626
sells 1.5 inch full view panel meters for $13.25 each.

They have a selection of values, including 50 uA DC.

Not as nice as surplus meters that cost someone
$50+ each.

groverc@gvgadg.gvg.tek.com wrote:

: I am in need of two small (<1.75") 50uA movement meters to finish a
: project. Since I live in the boondocks I wonder if anyone can help
: me find such items. Perhaps someone going to Dayton would be willing
: to look for me? Any help very much appreciated.
: By the way, I have looked in all the "regular" catalog sources
: to no avail. I think that these are going to be swap meet items.

: 73

: Grover
: WT6P
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

479. Re: Paralleling Power Diodes ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 20:30:00 UTC
From: alanb@sr.hp.com
Message-ID: <CLyBM1.Cy7@srgenprp.sr.hp.com>
Source record: 118419

Alan Anderson (alana@u018.me.vp.com) wrote:
: >
: >I wouldn't count on 3A with 3 diodes using that technique,
: >but you should get something better than 1A.
: >
: >AL N1AL
: >

: What would you recommend using for 3A at 4KV, I have seen some
: 2Amp 10000 volt "double diode" bridges in Nebraska surplus. These are
: setup for heat sink mounting. 2 in parallel ?

I would just use a series string of lower-voltage 3A diodes.

I hate to bring up the next point because, since it violates conventional
wisdom, it is bound to draw some flames. But what the heck...

You don't need to put resistors in parallel when you string
diodes in series.

There, I've said it.

Think about it. When you over-voltage a diode, it acts like a high-voltage
Zener and clamps at its breakdown voltage. So long as the current is
limited, no permanent damage occurs. Since all the diodes in the string
are in series, the current through each is the same. The current will be
limited to the leakage current of the lowest-leakage diode in the string,
typically a few microamps. Unless you exceed the SUM of the breakdown
voltages of all the diodes in the string, no catastrophic breakdown
will occur.

AL N1AL

480. Re: Want to obtain a very cheap high gain antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 20:44:19 UTC
From: alanb@sr.hp.com
Message-ID: <CLyC9w.DFE@srgenprp.sr.hp.com>
Source record: 118420

Roy Allen Sutton (rsutton@congo.EECS.Berkeley.EDU) wrote:

: Has anyone a sugestiong for a very cheap highly directional
: 2M antenna?

How about a long wire? A 100-foot wire would be about 15 wavelengths
which would give you tons of gain on the two meter band. I don't see
hwo you could get much cheaper than that. Of course, it would be a
bit hard to rotate :=)

AL N1AL

481. Re: Paralleling Power Diodes ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 23:16:24 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-280294181625@k4dii.ksc.nasa.gov>
Source record: 118421

In article <1994Feb22.153935.9921@ccd.harris.com>, drs@ccd.harris.com (Marie-Louise DaBrusco) wrote:
> I just obtained a pot full of 1N4007 diodes. They are 1KV @ 1A. I plan on
> using many of them for a bridge for a HV power supply. Since the supply is
> going to put out somewhere around 4KV, I will want to series a number of
> these guys to get enough piv for (since I am very conservative) around 8KV.
> Since they are rated at 1A, I am thinking that I want to parallel a few of
> these to get a good 3A rating. Anyboday see any problem with paralleling 3
> of these diodes? I realize that the forward resistance may be different for
> them.

Doug-

It should be possible to parallel diodes the way you parallel transistors: put a low-value "ballast" resistor in series with each.

For your high voltage requirement, be sure there is a capacitor (around 0.001 MicroFarad) in parallel with each set of parallel diodes, and be sure the capacitors have at least the same voltage rating as the diodes. This ensures that any voltage transient will be divided equally among the diodes in a string, rather than being determined by junction capacitance.

Note: Parallel resistors across each diode in a series string, serve no useful function. Slowly-varying voltage will divide according to the diode's leakage resistance, which effectively decreases as you approach its breakdown voltage. Further, you won't find many inexpensive, high-value resistors rated at 1000 volts dielectric strength! For example, an RC42, 2 watt carbon resistor is rated at 750 volts.

73, Fred, K4DII

482. Re: Want to obtain a very cheap high gain antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-02-28 23:50:32 UTC
From: julian@bongo.tele.com
Message-ID: <1994Feb28.235032.23304@bongo.tele.com>
Source record: 118422

In article <2ks78s$o5b@agate.berkeley.edu> rsutton@congo.EECS.Berkeley.EDU (Roy Allen Sutton) writes:
>
>Has anyone a sugestiong for a very cheap highly directional
>2M antenna?
>
> Homemade Yagi?
>
> Homemade Dish? (Do hams uses dish on 2M)?
You can use a dish. But to get good gain, you need a very large
dish.
>
>If you have references, please share them.

Sure. ARRL handbook, RSGB handbook, ARRL antenna book. Plus
others available at your local library or ham store.

--
Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

483. HP components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-01 07:07:46 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2kupk2$35b@olivea.ATC.Olivetti.Com>
Source record: 118423
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Is there anybody that knows which ,if any,74xxxx or other equivalent are
hp components 1820-0092, 1820-0090, 1820-0093, 1820-0119 or
have a list in general for hp to commercial equivalent
sorry if this is a ricorrent question .
Thanks to anybody that will help me.

1820-0092 should be a nixie driver .
These component are mounted inside an old (30 years) hp frequency counter
now i do not remember the model sorry .

Please email me directly if possible at robertov@atc.olivetti.com or
robertov@hqlab.ico.olivetti.com.

Roberto VALFREDINI

484. Looking for Lex...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-01 10:52:24 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <60290@uugate.wa7slg.ampr.org>
Source record: 118424

I'm looking for a Lexical Analyzer for DOS.

I haven't been able to find either a source or an executable for DOS
(yeah, I know... get a *real* OS...)

How about a 'port of "lex"? Does anyone know where one may be found?

Thanks in advance,

<Clint>

Internet: Clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

"Me thinks, therefores me is..."

485. Re: Looking for a keyboard for a HaL Telereader

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-01 15:54:34 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar1.155434.21970@ke4zv.atl.ga.us>
Source record: 118425
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <17772.wrmed@mr.net> <pja@wrmed.com> writes:
>My dad has had a HaL Telereader for years (decodes CW, RTTY, etc). The
>keyboard encoder has partially failed (one row of keys doesn't work).
>
>We traced the problem to the encoder and called HaL. They don't make it
>any more. I called the manufacturer of the chip (used to be General
>Instruments, now is MicroChip), any they said they don't make it anymore.
>
>We did discover that a "standard parallel keyboard" will work. Looking
>at the schematic, it looks like uses 8 bits of data, a strobe, and
>an ACK line.
>
>I could make a serial -> parallel converter and use an IBM style keyboard,
>but I would rather pick up another Telereader or parallel keyboard.
>
>Hints?

Give us the GI part number. I suspect many of us may have junk boxes
full of the encoders. Also note that a PC keyboard does not output
ASCII. It outputs a scan code that's interpreted by the PC bios to
an ASCII value. So you need a bit more than a serial to parallel
converter to make one work on your HAL.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

486. Re: Re: How to measure low power @ VHF & above.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-01 17:49:05 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470005@hpcss01.cup.hp.com>
Source record: 118426

```
Thermistor mounts +10 to -10 dBm
Therocouple detectors -20 to +20 dBm
Shottky Diode detectors -70 to -20 linear, to +20 corrected

use an HP436,437,438 or Gigatronics 8541/42
for the best results
```

487. Re: Comments on TAPR-2 board?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-01 18:10:58 UTC
From: dts@world.std.com
Message-ID: <CLzzuB.Cq6@world.std.com>
Source record: 118427
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <1994Feb28.202528.6888@newsgate.sps.mot.com> rapw20@email.sps.mot.com writes:
>Has anyone out there built a TNC from the TAPR-2 circuit board? If so, I'd be
>interested in hearing about it. Specifically, how difficult was it to locate
>parts, was it any cheaper than buying a used 1270 or other clone, any problems
>getting it to work?
>
>I'm looking for a (relatively) cheap entry into the 9600bps packet world and
>building a TAPR TNC and adding the 9600 modem seems like one way to do it.
>
>Any comments will be appreciated.
>
>Thanks & 73... Mark AA7TA

I have built one and have a second partially complete. You would certainly
do better buying a TNC instead. DSRI has some with 9600 built in, and so
forth. The biggest advantage I see with the TAPR modem is the ability to
do bit regen, but that is only an issue for your full duplex packet
repeater, not for user equipment.

Dan

--

Daniel Senie Internet: dts@world.std.com
Daniel Senie Consulting n1jeb@world.std.com
508-365-5352 Compuserve: 74176,1347

488. Re: How about VHF MOSFET's for 2-meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 00:36:41 UTC
From: Bob Lombardi <boblombardi@delphi.com>
Message-ID: <xE0LfkZ.boblombardi@delphi.com>
Source record: 118428

I built a 4 watt PA for a transverter based on one of the Motorola TMOS fets back in 86 or 87. I found the bias very easy to tweak for best IMD performance, and the matching quite easy; it is true that matching for lower power amps is generally easier than high power so that YMMV.

I did have to add a 24 V. PS to the station, but I pretty much already had one and only needed to expand the wiring harness. The thing gave me 4 W (+36 dBm) for around +23 dBm input power, which was pretty nice. And it was literally build, tweak once and on the air. No hair pulling, no swearing. (you would have had to been there while I tried to get some bipolars running to really appreciate that). I'd use another in a heartbeat.

This transverter was in Ham Radio, I think the VHF/UHF issue the year they got bought out.

I never had any trouble with static like the one guy said, and I do live in what is usually called the lightening capital of america, near Orlando, FL. Of course, I'm not doubting his word, and I did make it a point to put disconnect the antenna and put a 50 ohm load on the TR relay when not on the air. This was more to protect the GaAsFET front end than the output amp.

Just another $.02 worth....

Bob

--
Bob Lombardi WB4EHS >>>> internet: boblombardi@delphi.com
Melbourne, FL >>>> Engaged in too many hobbies to list here!
"It's great to be young and insane!" -- Michael Keaton `The Dream Team'
"It's pretty good to be middle-aged and insane, too." -- Me

489. Re: Looking for sources of ferrite rod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 04:08:14 UTC
From: drew@trl.oz.au
Message-ID: <drew.111.0@trl.oz.au>
Source record: 118429
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <19416.wrmed@mr.net> <wrmed@mr.net> writes:
>From: <wrmed@mr.net>
>Subject: Looking for sources of ferrite rod
>Date: Wed, 23 Feb 94 22:12:13 CST
>
>I am looking for ferrite rod for winding antennas, making inductors, etc.
>
>Since this is for a production quantity application, I would prefer
>a reliable source who might stock various sizes and shapes of ferrite
>rods, cores, and so forth.
>
>Anyone out there in the ether happen to have a name and number of a
>supplier of such items?
>
>Please e-mail replies. If people are interested in what I find out, I will
>post a summary.
>
>Thanks in advance,
>
>Paul J. Anderson - N0RIK
>Stillwater, MN
>pja@wrmed.com
>wrmed@mr.net
>n0rik@wb0gdb.stp.mn.usa

The most well-known supplier of ferrite materials for radio/electronic applications would perhaps be;

Amidon Associates, 12033 Otsego St, North Hollywood, Ca. 91607.

Pretty good data sheet available with relevant information on rods, toroids, E-cores, chokes etc..

73, Drew, VK3XU.

490. Re: Challenge: Cheapest (least expensive) homeb

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 08:05:10 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar2.080510.26398@ke4zv.atl.ga.us>
Source record: 118430

In article <mbuttsCLvAGM.AKD@netcom.com> mbutts@netcom.com (Mike Butts) writes:
>
>Back in the mid-1960's Novices could run phone (AM in those days)
>on 145-147 MHz. The Heath Twoer was a cheap (for then) and simple
>kit rig that was very popular. I and quite a few of my teenaged
>friends got started on hamming this way. 2 meters may be too
>crowded most places for that today, but it would sure be nice
>if a cheap simple rig like this could recreate those times for
>today's kids.

Those old AM rigs were complex compared to what we can do with
modern ICs and FM. Using the Motorola MC2833 single chip transmitter
and the MC131135 single chip receiver, you can easily build a low
power crystal controlled HT. With a synthesizer chip added, a full
800 channel HT could be assembled, and with a power brick, a complete
mobile rig.

Motorola offers evaluation kits (free if you have the right letterhead)
including chips, circuit boards, and instructions for these chips. It's
really easy to make them work. A HT is a two evening project. Using these
chips, it's really simple to do a complete RF section for a 9600 baud
packet station. The MC131135 has a linearized output suitable for 9600
baud, and the MC2833 is direct FM. Highly recomended.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

491. Re: Impedance matching prob.-AM carr. current

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 08:09:44 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar2.080944.26478@ke4zv.atl.ga.us>
Source record: 118431

In article <CLxKBD.CH6@ucdavis.edu> changm@land.cs.ucdavis.edu (Mark William Chang) writes:
> My friend has built an AM carrier-current broadcast band
>transmitter for the community college he teaches at. He is having
>trouble trying to match the vacuum tube output stage of the
>transmitter to the AC power line. Any hints or suggestions?

Yeah, *don't do that*. The carrier current rules require that you take affirmative steps to limit radiation outside the licensed complex. The usual way to do that is with "leaky coax" distribution. The power system is too uncharacterized for this purpose.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

492. Re: Help understanding FM and SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 09:12:59 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar2.091259.26879@ke4zv.atl.ga.us>
Source record: 118432

In article <2kvoos$t5v@crocus.csv.warwick.ac.uk> maupb@csv.warwick.ac.uk (Jason Saunders) writes:
>I've read the RSGB's RAE manual, and still have difficulty with their
>descriptions of FM and SSB. In FM, as I understand, the frequency of the
>carrier is modulated by the amplitude of the speech. So why does the bandwidth
>of the RF signal matter? If you have, say a 28Mhz carrier and the bandwidth of
>the Rf signal is 5kHz, why should that limit the audio bandwidth to 5Khz? If
>you send a 20kHz audio signal surely the RF signal would just oscillate
>between 28Mhz+-5kHz at 20kHz? I realise that filtering the output is important
>to remove any harmonics, but as you can see I'm quite confused about the
>bandwidth issue.

A*[cos(Wo*t) - delta phi/2 * sin(Wo + p)*t - delta phi/2 * sin(Wo - p)*t]

That really says it all. :-)

But perhaps a little simplified verbal description might be in order.
Modulation and mixing go hand in hand. You can't have one without the
other. Let's break down the FM equation into it's parts. The cos(Wo*t)
represents the carrier wave. The delta phi (don't have Greek symbols
on this keyboard) represents the deviation. And sin(Wo+p)*t and sin(Wo-p)*t
represent the upper and lower sidebands respectively with p being the
modulating frequency. So you can see that the upper sideband consists
of the sum of the carrier and modulating frequencies tines half the
deviation, and the lower sideband is the product of the deviation and
the difference between the carrier and modulating frequencies. So FM
has sidebands too, like AM, but multipled by the deviation. Note these
are *vector* quantities and don't combine in a naive way, and note that
all of these components wind up being multiplied by A, the signal amplitude,
a constant. Rule of thumb for FM occupied bandwidth: two times the highest
modulating frequency plus the deviation is occupied bandwidth. So a NBFM
transmitter with a highest modulating frequency of 5 kHz and a deviation
of 5 kHz will occupy approximately 15 kHz of bandwidth. The amplitude of
the whole complex wave is constant, but is shared among the components in
a fairly complex manner. For example there are certain modulating frequencies
that when combined with certain deviations will result in a carrier
with zero power, and all the power in the sidebands. These are called
Bessel nulls and are handy ways of measuring deviation.

>The other thing is SSB. I get the general idea of using power more efficiently
>by sending half the audio waveform as the other half is going to be a mirror
>image, and removing the carrier as we want to concentrate power on the signal
>instead of the carrier. What I don't get is how one removes the carrier and
>then adds it back again. Can someone explain that, please?

A*cos(wt) + a/2*cos((w+p)i*t+phi) + a/2*cos((w-p)*t-phi)

Again we're mixing, but this time the carrier has a constant amplitude, A, and the sidebands have a variable amplitude, a/2 where a is the amplitude of a particular modulating frequency. Notice the w+p and w-p parts that are the sum and difference frequencies of the carrier and the modulation, the upper and lower sidebands respectively. If we use a balanced mixer, the A*cos(wt) will cancel because of the 180 phase shift, removing the carrier. If we do this mixing twice, in separate mixers, but with one mixer having w shifted 90 degrees, and then combine the outputs, we can eliminate one of the sidebands. This is the phasing method of SSB generation. Or we can use a narrow filter to chop off the other sideband from the output of a single balanced mixer. That's the way it's typically done in amateur equipment.

What we have left is a faithful copy of the original modulation, but translated in frequency to a band near that of the original carrier. We can then use another simple mixer with a local carrier to mix this signal once again. We'll get a sum frequency that's a higher RF frequency, local carrier+modulation, and a difference frequency that's *constant* - modulation, or just the original audio with a DC offset. The constant is dependent on the *phase* difference between the local carrier and the original carrier. We pass the output of the mixer through a lowpass filter to get rid of the local carrier and sum frequencies, and we're left with a copy of the original audio with a DC offset. If we AC couple this to an AF amp, we have the original audio modulation.

Easy.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

493. Re: Looking for Lex...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 10:00:59 UTC
From: tgm@netcom.com
Message-ID: <tgmCM17tn.ALu@netcom.com>
Source record: 118433

ka7oei@uugate.wa7slg.ampr.ORG wrote:
: I'm looking for a Lexical Analyzer for DOS.
: I haven't been able to find either a source or an executable for DOS
: (yeah, I know... get a *real* OS...)
: How about a 'port of "lex"? Does anyone know where one may be found?

lots of DOS development tools are available via ftp from:

ftp.iro.umontreal.ca:/pub/Internet/gnuish

You will find flex (a free version of lex) and bison (a free
version of yacc).

Thomas
KI4N

494. Re: Looking for Lex...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 10:04:57 UTC
From: Anders.Fongen@saga.no
Message-ID: <Anders.Fongen.32.000A1568@saga.no>
Source record: 118435

In article <60290@uugate.wa7slg.ampr.org> ka7oei@uugate.wa7slg.ampr.ORG writes:
>From: ka7oei@uugate.wa7slg.ampr.ORG
>Subject: Looking for Lex...
>Date: 1 Mar 94 10:52:24 GMT

>I'm looking for a Lexical Analyzer for DOS.

>I haven't been able to find either a source or an executable for DOS
>(yeah, I know... get a *real* OS...)

>How about a 'port of "lex"? Does anyone know where one may be found?

>Thanks in advance,

><Clint>

At least, I know that "MKS Toolkit" has a lex product. I also think that GNU
BISON (their LEX clone) is available for DOS.

If you find one, remember to check out which C compiler it works with.

Yours Sincerely
Anders Fongen (LA6UIA)

495. Re: Looking for Motorola VHF power transistor sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 16:50:42 UTC
From: jfw@ksr.com
Message-ID: <2l2g52$8u3@hopscotch.ksr.com>
Source record: 118434

>J.D. Cronin (jdc3538@ultb.isc.rit.edu) wrote:
>: I'm looking for some Motorola VHF power transistors (MRF240/A and
>: others). The only catalog I found them in is from a company that
>: is no longer in business. Any suggestions? I looked in the
>: mailorder list from ftp.cs.buffalo.edu, but nothing looked
>: promising.

Ah, tell the folks at ftp.cs.buffalo.edu to install the latest list;
RF PARTS carries this transistor for $16.50. (1-800-RF PARTS)

Your friendly list maintainer,
John, WB7EEL

496. low voltage Solid State relays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 18:55:30 UTC
From: levine@mc.com
Message-ID: <2l2nf2$aov@jericho.mc.com>
Source record: 118436

I need a source for some low voltage solid
state realys. I am making a CT interface to the
remote-control port on the TS850. The relays
must be able to turn on using the parallel port
data lines voltage to switch in various resistor
values to the remote control port.

Anyone have or know of a source? Radio shack
5v relays wont work. Dont want any external
power to the circuit. (want it to fit in
a DB25 shell).

Something similar to the circuit described
in this month's NCJ.

```
------------------------------------------------------------
|| // ||\\ //|| //\\ //\\
|| // || \\ // || // //
||// || \\ || // //
||\\ || || || \\ === \\ ===
|| \\ || // || \\ // \\ //
|| \\ || // || \\// \\//
------------------------------------------------------------FTAC
```
Bob Levine KD1GG 7J1AIS VK2GYN formerly KA1JFP
levine@mc.com <--Internet email Phone(508) 256-1300 x247
kd1gg@wa1phy.ma <--Packet Mail FAX(508) 256-3599
----

497. Series Diodes (was Re: Paralleling Power Diodes ?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 21:31:16 UTC
From: mjsilva@ted.win.net
Message-ID: <109@ted.win.net>
Source record: 118437

In article <CLyBM1.Cy7@srgenprp.sr.hp.com>, Alan Bloom (alanb@sr.hp.com) writes:
>
>I hate to bring up the next point because, since it violates conventional
>wisdom, it is bound to draw some flames. But what the heck...
>
> You don't need to put resistors in parallel when you string
> diodes in series.
>
>There, I've said it.
>
>Think about it. When you over-voltage a diode, it acts like a high-voltage
>Zener and clamps at its breakdown voltage. So long as the current is
>limited, no permanent damage occurs. Since all the diodes in the string
>are in series, the current through each is the same. The current will be
>limited to the leakage current of the lowest-leakage diode in the string,
>typically a few microamps. Unless you exceed the SUM of the breakdown
>voltages of all the diodes in the string, no catastrophic breakdown
>will occur.
>
>

I understand what you're saying, but it still scares me. Without the
resistors the reverse voltage will divide very unevenly across the
diodes, depending on their individual leakage. Thus in a string of
diodes it seems likely that you'll have one or two reaching their
Zener "knee" every cycle. I realize that once that happens the other
diodes will take the remaining voltage because of the increased leakage
current of the zenering (did I just invent a word?) diode. The
question is: does that cause any long-term degradation of the diodes.
The only case I know that's even remotely similar is that of using the
emitter-base junction of a transistor as a zener, after which they say
it's not worth much as a transistor any more.

Not looking for flames, just understanding...

Mike, KK6GM

498. Re: Want to obtain a very cheap high gain antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-02 23:36:37 UTC
From: oconnell@leviathan.tamu.edu
Message-ID: <2l37u5$ic1@news.tamu.edu>
Source record: 118438

Roy Allen Sutton (rsutton@congo.EECS.Berkeley.EDU) wrote:

: Has anyone a sugestiong for a very cheap highly directional
: 2M antenna?
September 93 issue of 73 Magazine had an article on how to convert a
TV antenna to a 2M bean. I have been told that you can buy the parts
form Texas Towers for about $20 to do the same.

: Homemade Yagi?

: Homemade Dish? (Do hams uses dish on 2M)?

: If you have references, please share them.

: Thanks for any help,
: Roy

//
// internet: oconnell@leviathan.tamu.edu // Ma Bell //
// HAM Radio: KC5DWB The handle is Bob // Day (409) 291-5354 //
// U.S. Mail: R. E. O'Connell // Fax (409)291-5344 work //
// 11749 Wrong Rd. // Night (409) 589-2016 //
// Bryan, Texas 77808 //Modem wrong (409)589-2159//
//
|| From LINUX (wrong) to LINUX (leviathan) to the world of internet ||
||==||

499. FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 00:47:16 UTC
From: dzarda@saucer.cc.umr.edu
Message-ID: <1994Mar3.004716.5198@umr.edu>
Source record: 118439

Does anyone have plans or know of a way to boost the output of the
BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
need to boost the signal to reach about 3 miles. I need something very soon!
If so please reply. Thanks.

Blue Skies, BLACK DEATH, DON'T GO SPLAT!!
"the Fallman"
Don Zarda
UNITED STATES PARACHUTE ASSN. MEMBER C-23224
dzarda@umr.edu

500. Re: Looking for sources of ferrite rod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 00:51:06 UTC
From: dmturne@ptsfa.PacBell.COM
Message-ID: <1994Mar3.005106.11199@ptsfa.PacBell.COM>
Source record: 118440
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <drew.111.0@trl.oz.au> drew@trl.oz.au (Drew Diamond) writes:
>
>The most well-known supplier of ferrite materials for radio/electronic
>applications would perhaps be;
>
> Amidon Associates, 12033 Otsego St, North Hollywood, Ca.
> 91607.
>

Amidon has moved (twice). Their new address is:

Amidon Associates Inc.
2216 East Gladwick Street
Dominguez Hills, CA 90220

(310) 763-5770
(310) 763-2250 FAX
--
Dave Turner (510) 823-2001 {att,bellcore,sun,ames,decwrl}!pacbell!dmturne

501. Re: low voltage Solid State relays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 02:38:09 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2l3iih$2e6@usenet.INS.CWRU.Edu>
Source record: 118441

In article <2l2nf2$aov@jericho.mc.com>, Bob Levine <levine@mc.com> wrote:
>The relays must be able to turn on using the parallel port data lines
>voltage to switch in various resistor values to the remote control
>port.

Will a CMOS 4066 or its 4016, 4052, 4053, 4529, 4051, or 4551 cousins work? They are very low-power -- max. quiescent current is measured in microamps. Try powering them off a control line that you don't plan to use for signalling.

These things have an on-resistance of ~300 ohms, an off-resistance on the order of 10^9 ohms, and can not switch voltages outside of their supply rails. Supply voltage is anything from -0.5V to +18V.

Stephen

--
Stephen Trier KB8PWA "What's the human race going to do next?
Other: trier@ins.cwru.edu Grind up clarinets and smoke them?"
Home: sct@po.cwru.edu - narcotics agent Greg Elam,
quoted on Clarinet

502. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 02:50:29 UTC
From: ez006683@chip.ucdavis.edu
Message-ID: <CM2IK7.HCG@ucdavis.edu>
Source record: 118442

Donald Zarda (dzarda@saucer.cc.umr.edu) wrote:

: Does anyone have plans or know of a way to boost the output of the
: BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
: need to boost the signal to reach about 3 miles. I need something very soon!
: If so please reply. Thanks.

: Blue Skies, BLACK DEATH, DON'T GO SPLAT!!
: "the Fallman"
: Don Zarda
: UNITED STATES PARACHUTE ASSN. MEMBER C-23224
: dzarda@umr.edu
sniff, sniff, do you smell smoke?
:-)

Dan
--
---
* Daniel D. Todd Packet: KC6UUD@KE6LW.#nocal.ca.usa *
* Internet: ddtodd@ucdavis.edu *
* Snail Mail: 1750 Hanover #102 *
* Davis CA 95616 *
---
* All opinions expressed herein are completely ficticious any *
* resemblence to actual opinions of persons living or dead is *
* completely coincidental. *
---

503. Re: Help understanding FM and SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 03:10:30 UTC
From: alanb@sr.hp.com
Message-ID: <CM2JHI.L9J@srgenprp.sr.hp.com>
Source record: 118443

Jason Saunders (maupb@csv.warwick.ac.uk) wrote:

: I've read the RSGB's RAE manual, and still have difficulty with their
: descriptions of FM and SSB. In FM, as I understand, the frequency of the
: carrier is modulated by the amplitude of the speech. So why does the bandwidth
: of the RF signal matter? If you have, say a 28Mhz carrier and the bandwidth of
: the Rf signal is 5kHz, why should that limit the audio bandwidth to 5Khz?

It doesn't. It's perfectly OK to use a modulation index of less than 1 (that
is, modulating frequency is greater than deviation), but it is normally not
done because of reduced signal-to-noise ratio.

Why? Let's say you modulate at a 20 kHz rate but with only 5 kHz deviation.
The sidebands are located at +/- 20 kHz from the carrier. That means that
your receiver bandwidth must be 40 kHz, even though the peak-to-peak
deviation is only 10 kHz. Wider bandwidth means more noise. If you had
used 20 kHz deviation, you would have had a 4 times louder signal with
about the same required receiver bandwidth.

: The other thing is SSB. I get the general idea of using power more efficiently
: by sending half the audio waveform as the other half is going to be a mirror
: image, and removing the carrier as we want to concentrate power on the signal
: instead of the carrier. What I don't get is how one removes the carrier and
: then adds it back again. Can someone explain that, please?

The normal way is to use a balanced modulator which outputs the sum and
difference frequencies (carrier +/- modulation = the two sidebands)
while suppressing the carrier. You could also generate conventional AM
(using an unbalanced modulator) and use a sharp-tuning crystal filter
to filter out the carrier and unwanted sideband.

At the receiver, you simply generate an unmodulated signal at the same
frequency as the (suppressed) carrier of the SSB signal and add the
two together before demodulation. (Actually, most receivers are superhets
which convert the received signal down to an intermediate frequency, so
the carrier is generated at that frequency.)

AL N1AL

504. Re: Series Diodes (was Re: Paralleling Power Diodes ?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 03:14:30 UTC
From: alanb@sr.hp.com
Message-ID: <CM2Jo6.LEr@srgenprp.sr.hp.com>
Source record: 118444

Michael Silva (mjsilva@ted.win.net) wrote:
:
: In article <CLyBM1.Cy7@srgenprp.sr.hp.com>, Alan Bloom (alanb@sr.hp.com) writes:
: >
: > You don't need to put resistors in parallel when you string
: > diodes in series.
: >
: I understand what you're saying, but it still scares me. Without the
: resistors the reverse voltage will divide very unevenly across the
: diodes, depending on their individual leakage. Thus in a string of
: diodes it seems likely that you'll have one or two reaching their
: Zener "knee" every cycle. I realize that once that happens the other
: diodes will take the remaining voltage because of the increased leakage
: current of the zenering (did I just invent a word?) diode. The
: question is: does that cause any long-term degradation of the diodes.
: The only case I know that's even remotely similar is that of using the
: emitter-base junction of a transistor as a zener, after which they say
: it's not worth much as a transistor any more.

Yes, I have seen degradation of a transistor's beta when the base-emitter
junction is reverse-biased for a relatively long period of time.
Frankly, I'm not sure what causes that effect. But I have never heard
of degradation of diode characteristics from reverse-biasing as long as
the current is held to a low value. Don't forget, we're talking only a
few microamps here, since the current flow will be limited by the
lowest-leakage diode in the string.

AL N1AL

505. FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 05:50:51 UTC
From: jangus@skyld.grendel.com
Message-ID: <762673851snx@skyld.grendel.com>
Source record: 118445

In article <1994Mar3.004716.5198@umr.edu> dzarda@saucer.cc.umr.edu writes:

> Blue Skies, BLACK DEATH, DON'T GO SPLAT!!
> "the Fallman"
> Don Zarda
> UNITED STATES PARACHUTE ASSN. MEMBER C-23224
> dzarda@umr.edu

Hey DOn, is it true that every parachute is guarenteed to open on impact?

>
Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

506. Series Diodes (was Re: Paralleling Power Diodes ?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 07:19:43 UTC
From: mjsilva@ted.win.NET
Message-ID: <113@ted.win.net>
Source record: 118446

In article <CLyBM1.Cy7@srgenprp.sr.hp.com>, Alan Bloom (alanb@sr.hp.com) writes:
>
>I hate to bring up the next point because, since it violates conventional
>wisdom, it is bound to draw some flames. But what the heck...
>
> You don't need to put resistors in parallel when you string
> diodes in series.
>
>There, I've said it.
>
>Think about it. When you over-voltage a diode, it acts like a high-voltage
>Zener and clamps at its breakdown voltage. So long as the current is
>limited, no permanent damage occurs. Since all the diodes in the string
>are in series, the current through each is the same. The current will be
>limited to the leakage current of the lowest-leakage diode in the string,
>typically a few microamps. Unless you exceed the SUM of the breakdown
>voltages of all the diodes in the string, no catastrophic breakdown
>will occur.
>
>

I understand what you're saying, but it still scares me. Without the
resistors the reverse voltage will divide very unevenly across the
diodes, depending on their individual leakage. Thus in a string of
diodes it seems likely that you'll have one or two reaching their
Zener "knee" every cycle. I realize that once that happens the other
diodes will take the remaining voltage because of the increased leakage
current of the zenering (did I just invent a word?) diode. The
question is: does that cause any long-term degradation of the diodes.
The only case I know that's even remotely similar is that of using the
emitter-base junction of a transistor as a zener, after which they say
it's not worth much as a transistor any more.

Not looking for flames, just understanding...

Mike, KK6GM

507. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 13:01:51 UTC
From: konstu@eua.ericsson.se
Message-ID: <2l4n3v$n7e@euas20.eua.ericsson.se>
Source record: 118447

For a string of diodes in series without a parallel resistor string,
the reverse voltage across individual diodes will depend on the leakage
current of each of the diodes as they approach breakdown.

This is not particularly nice, but I guess the current in diodes which
have broken down is limited to the leakage current of diodes which
have not broken down, so the diodes should survive.

However, the parallel string of capacitors, (which should be present
for transient protection), may not be so happy about the uneven voltage
distribution unless each capacitor has a voltage rating equal to the
peak voltage for the whole string.

73, Stuart

508. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 13:58:12 UTC
From: jh4658@medtronic.COM
Message-ID: <2l4qdk$q7i@gazette.medtronic.COM>
Source record: 118448

Donald Zarda (dzarda@saucer.cc.umr.edu) wrote:

: Does anyone have plans or know of a way to boost the output of the
: BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
: need to boost the signal to reach about 3 miles. I need something very soon!
: If so please reply. Thanks.

Attach a very tall, high gain antenna. :0)

509. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 15:10:33 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Mar3.151033.44360@yuma>
Source record: 118449

In article <CM2IK7.HCG@ucdavis.edu> ez006683@chip.ucdavis.edu (Daniel D. Todd) writes:
>Donald Zarda (dzarda@saucer.cc.umr.edu) wrote:
>: Does anyone have plans or know of a way to boost the output of the
>: BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
>: need to boost the signal to reach about 3 miles. I need something very soon!
>: Don Zarda
>: dzarda@umr.edu
>sniff, sniff, do you smell smoke?
>:-)
>Dan

No, but there's three plain, white vans crusing up and down the street
and they have some really cool antennas, but no ham-call license plates.
I'm leaving now.
Galen, KF0YJ

510. Source for "heat Diodes/Semi's" ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 16:27:28 UTC
From: drs@col.hp.com
Message-ID: <2l535g$k07@hp-col.col.hp.com>
Source record: 118450

```
This may be off area but does anyone know of
a source (hopefully surplus and cheap) for
the semiconductor/devices used to cool chips etc.
You put DC in and one side gets hot by drawing
heat from the other side. They use them to
make those hot/cool 'coolers' and to cool
chips and stuff.
An address / phone would be nice.
```

511. Re: Series Diodes (was Re: Paralleling Power Diodes ?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 16:56:29 UTC
From: tomb@lsid.hp.com
Message-ID: <CM3Lq5.A8C@hpcvsnz.cv.hp.com>
Source record: 118451

Alan Bloom (alanb@sr.hp.com) wrote:

: Yes, I have seen degradation of a transistor's beta when the base-emitter
: junction is reverse-biased for a relatively long period of time.
: Frankly, I'm not sure what causes that effect. But I have never heard
: of degradation of diode characteristics from reverse-biasing as long as
: the current is held to a low value. Don't forget, we're talking only a
: few microamps here, since the current flow will be limited by the
: lowest-leakage diode in the string.

I'd like to add a couple comments basically in support of this.

First, another thing that degrades with asking the BE junction to handle a reverse current is noise figure; this can be dramatic with relatively short pulses current. My point of reference on this is very low noise audio amplifiers; noise figures around 0.5dB, optimized for 50k ohm source impedances. A "trick" to include in your circuit designs for low noise amps is some way to insure that on power-on and power-off, no capacitors try to charge/discharge through the BE junctions of your input stages.

Second, how about a simple diode balance tester? Someone with an interest in this can go check some diodes and let us know quantitatively how much of a problem it really is. Tester: feed a transformer with a center-tapped high voltage secondary from a variac, so you can control the voltage. Ground the center-tap. On each end of the winding, put a capacitor, perhaps 0.1uF, rated at the peak voltage of the secondary (RMS*1.5 or so). Connect two diodes in series between the remaining ends of the caps. Measure the voltage with a scope at the junction between the diodes. If things are prefectly balanced, that voltage will always be zero. You should be able to tell from the shape, phase and amplitude of the waveform you observe there just what the imbalances are. You could use this jig to sort (match) diodes, if you really feel a need to.

73, K7ITM

512. Re: Challenge: Cheapest (least expensive) homeb

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 17:17:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar3.171713.4827@ke4zv.atl.ga.us>
Source record: 118452

In article <2l2a44$iij@blkbox.blkbox.COM> borm@blkbox.COM (Eric Borm) writes:
>gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>>modern ICs and FM. Using the Motorola MC2833 single chip transmitter
>>and the MC131135 single chip receiver, you can easily build a low
>>power crystal controlled HT. With a synthesizer chip added, a full
>
>I believe you're referring to the MC13135 (rather than 131135)

Yeah, keyboard stutter. :-)

>>Motorola offers evaluation kits (free if you have the right letterhead)
>>including chips, circuit boards, and instructions for these chips. It's
>
>My very recent Motorola databook doesn't mention these evaluation kits.
>The book I refer to is the Communications Device Data book DL136/D Rev 3.

Call'em up. I did after seeing the writeup in Quarterly Devices. Got
a MC2833 kit and a MC13135 kit.

>I'm not sure how simple these circuits are to understand. The receiver
>schematic includes approx 35 components. Both examples given are tuned
>to 49.7 MHz, so adjustments would need to be made for HAM use.

Seemed simple enough to me. There are 27 parts counting all the resistors
and bypass caps, but there are only 5 critical components aside from the
chip itself, and only one of those needs to be changed to scale the
frequency, the first LO crystal. The chip is rated to 200 MHz, but I've
pushed it as high as 223 MHz with little or no loss of performance.
Note that it takes about 0.75 microvolt for 12 db SINAD, so you might
want to add a RF stage and bandpass filter ahead of the kit for good
performance. A tuned input would be a good idea in any case to limit
image and intermod problems. In a transceiver this could be a common
input/output network.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

513. Re: Looking for Lex...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 18:08:27 UTC
From: mzenier@eskimo.com
Message-ID: <CM3p29.9yE@eskimo.com>
Source record: 118453

In <60290@uugate.wa7slg.ampr.org>, ka7oei@uugate.wa7slg.ampr.ORG wrote:
: I'm looking for a Lexical Analyzer for DOS.
: How about a 'port of "lex"? Does anyone know where one may be found?

In my travels, I've run across at least 3 versions of Lex implemented
in C. (And another that does Turbo Pascal.)

First, there's AT&T Lex. You can't get the source to this.
(A version of AT&T Yacc was out, but AT&T sicced their lawyers on
people. No bit deal, Bison and Byacc are as good or better.)

Next, there's a Lex written at University of Waterloo (by
Charles Forsythe?) that was released on a DECUS souce code tape.
It has an incompatible source languge format. This was available as
a port to DeSmet C (a now obselete "classic" ie. Version 7 level compiler)
from the C Users Group, sold (for a while) by the Austin Code Works,
and is (I think) the lex in the MSDOS/C directory in the Simtel echos
sites C.

Finally, there's Flex. This is a souped up Lex written at UCB that
is the most common. It gains its performance improvement at the
expense of radically incompatible file input compared to AT&T Lex, but
as it's now the defacto standard, this is the route to take.
Available in the TXTUTL, GNUISH and DJGPP directories under MSDOS
on a Simtel echo. Also just about every where else (Linux release,
C Users Group, Austin Code Works, and wherever comp.sources.misc is
archived).

Mark Zenier mzenier@eskimo.com markz@ssc.com

514. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 20:50:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940303205045OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 118461

>: However, the parallel string of capacitors, (which should be present
>: for transient protection), may not be so happy about the uneven voltage
>: distribution unless each capacitor has a voltage rating equal to the
>: peak voltage for the whole string.
>
>Funny you should mention that. I don't think the capacitors are needed
>either.

Well, I was doubting you on the resistors, but looked at my old
RCA transistor/diode manual and couldn't think of a good
response. But I'm primed for the capacitors!

The RCA manuals points out that the capacitance of a diode is
small. In a series string of diodes the later diodes are in
parallel with the normal capacitance-to-ground all wiring has.
Since this is larger than the capacitance of the first diode in
the string, then on a transient the first diode will see the
majority of the total voltage. The capacitors across the diodes
swamp out the capacitance to ground resulting in even division of
the voltage.

PS: Maybe the resistors are there to protect the capacitors,
perhaps even when a diode opens?

515. Re: Looking for Lex...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 22:15:24 UTC
From: jim@n5ial.mythical.com
Message-ID: <1994Mar3.221524.6874@n5ial.mythical.com>
Source record: 118454

In article <Anders.Fongen.32.000A1568@saga.no> Anders.Fongen@saga.no (Anders Fongen) writes:

>At least, I know that "MKS Toolkit" has a lex product. I also think that GNU >BISON (their LEX clone) is available for DOS.

bison is not a lex clone---it's a yacc clone. The GNU clone of lex is called flex.

And as far as I know, flex will compile under dos (I use it on the UNIX side, but I seem to recall a Makefile for dos). I don't know if bison will compile under dos, but I believe byacc (Berkeley yacc) will (again, I seem to recall a Makefile for dos being in there). Don't quote me on either of these, though.... :-) (Of course, since they're free, you have little to lose.)

Oh, one other point to make. If you use bison as a yacc substitute, keep in mind that all code you produce has to meet the terms of the GPL. This does *NOT* apply to flex. Any followups on this point (i.e., GPL is good/evil) should, of course, be directed to another group (actually, I'm curious as to how this topic ended up here in the first place).

>If you find one, remember to check out which C compiler it works with.

Since when has lex or yacc output been specific to one compiler? Granted, there may be some issues between ANSI/K&R C, but other than that, lex and yacc should produce rather portable code (unless you have a badly-written lex or yacc ... and if that's the case, I wouldn't trust it anyways!).

Later,
--jim

--
73 DE N5IAL (/4) < Running Linux 0.99 PL10 >
jim@n5ial.mythical.com ICBM: 30.23N 86.32W
|| j.graham@ieee.org Packet: N5IAL@W4ZBB (Ft. Walton Beach, FL)
E-mail me for information about KAMterm (host mode for Kantronics TNCs).

516. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-03 22:45:09 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Mar3.224509.4721@ultb.isc.rit.edu>
Source record: 118455

In article <1994Mar3.004716.5198@umr.edu> dzarda@saucer.cc.umr.edu (Donald Zarda) writes:
>
> Does anyone have plans or know of a way to boost the output of the
>BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
>need to boost the signal to reach about 3 miles. I need something very soon!
>If so please reply. Thanks.
>
>Blue Skies, BLACK DEATH, DON'T GO SPLAT!!
>"the Fallman"
>Don Zarda
>UNITED STATES PARACHUTE ASSN. MEMBER C-23224
>dzarda@umr.edu

Try the alt.radio.pirate newsgroup. There is also a FM-10 mailing
list, and a FTP site. There are plans for amps, power meters, etc.

Jim

517. Re: inductors etched on pcbs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 02:43:11 UTC
From: JFurman@SPA.MHS.COMpuServe.COM
Message-ID: <940304024311_555063.0_FHI78-1@CompuServe.COM>
Source record: 118456

"Radio Engineer's Handbook" by Fredrick E. Terman, 1943
has formulas and correction tables for flat spiral
inductors in circular, rectangular, and square shapes.
Since the pcb traces are differently shaped than round
wire or flat wound strip, the formulas will be starting
points. These coils are in free space away from ground
planes, so single sided pcb construction is equivalent.
I think Terman also analyzes self resonance due to dis-
tributed capacitance in inductors generally.
73 Jeff KD6MNP Jfurman@spa.mhs.compuserve.com

518. Re: Converting cheap-o walkie-talkies (stabilizing crystals?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 03:17:12 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCM4EGq.JD4@netcom.com>
Source record: 118457

In article <1994Mar3.152902.9597@mnemosyne.cs.du.edu> jsherman@nyx10.cs.du.edu (Jonathan Sherman) writes:
>I've been thinking about how most walkie-talkies work at 49.9xxMHz and it
>occured to me that 6m is 50.1 and higher... So - I grabbed a cheap-o
>walkie-talkie (an AM and an FM) from RS, ripped it open and started to see
>what I could do to it. I found that I could tune to a 6 MHz range using
>the little tuning coil inside and my freq. counter. However, I couldn't
>get a stable signal once I deviated very much from the frequency it was
>designed for. Is this due to the crystal? If so, can I just replace the
>crystal and maybe some other misc. parts? I'd love to be able to take a $10
>walkie-talkie and convert it to work in the amateur band. Any ideas?

I've done this some time ago, yes you need to change the crystal. I got some crystals at hamfests and such for cheap. If you wanted a specific frequency, you may have to order it. May be too expensive, though.

519. Re: Source for "heat Diodes/Semi's" ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 03:23:34 UTC
From: jstroppe@franklin.uhl.uiowa.edu
Message-ID: <2l69jm$skh@nexus.uiowa.edu>
Source record: 118458

Don

Here are a couple of companies

Melcor
Materials Electronics Products Corporation
1040 Spruce Street
Trenton, New Jersey 08648
Ph. 609 303 4178
FAX 609 393 9461

Marlow Industries, Inc.
10451 Vista Park Road
Dallas, Texas 75238 1645
Ph 214 340 4900
FAX 214 341 5212

Have ordered from Marlow. Their standard single stage tecs run from $12 to $55.50. Special single stage tecs run $23 to $150. Multi stage tecs run $43 to $810. (tecs = thermoelectric coolers)

Both companies will send you a very nice application booklet if you give them a call. The book gives enough info to design simple cooling circuits. Hope this all helps , I've got my eye on a used set for a special coffee cup coaster that would heat with the handel in one direction and for tea cool with the handel in the other direction. John WA0VYZ

520. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 03:24:04 UTC
From: alanb@sr.hp.com
Message-ID: <CM4Es4.LJB@srgenprp.sr.hp.com>
Source record: 118459

Stuart Hale (konstu@eua.ericsson.se) wrote:
: For a string of diodes in series without a parallel resistor string,
: the reverse voltage across individual diodes will depend on the leakage
: current of each of the diodes as they approach breakdown.

: This is not particularly nice, but I guess the current in diodes which
: have broken down is limited to the leakage current of diodes which
: have not broken down, so the diodes should survive.

Right.

: However, the parallel string of capacitors, (which should be present
: for transient protection), may not be so happy about the uneven voltage
: distribution unless each capacitor has a voltage rating equal to the
: peak voltage for the whole string.

Funny you should mention that. I don't think the capacitors are needed either.

I can think of two reasons for the capacitors. One is as you said: for transient protection. However this could be done with a single capacitor (or two for center-tapped secondaries) across the secondary. For that matter, seems to me that a transient suppressor on the primary should take care of the matter.

The only other reason I have heard for putting cap's across the diodes is in case different diodes in the string turn off at different times due to different carrier lifetimes. But if you use all diodes from the same manufacturer's batch they will be very well matched.

But even if they aren't, remember that the voltage across the diode string is close to zero at the moment of turnoff. For a normal capacitor-input power supply, the turnoff point is near the top of the 60-Hz sinewave where the voltage is changing very slowly. It will take a good portion of the 1/60 second cycle time (several milliseconds) before the diodes are reversed-biased significantly.

But let's take a worst-case condition: A diode rectifier feeding a resistive load or a choke-input filter. With a 60-Hz line, the reverse voltage across a string of, say, 5 diodes won't reach 1/5 of peak for 1 / (5 * 60 * 2 * PI) sec = .53 milliseconds after turn-off. So the slowest diode would have to turn off >= .53 ms after the next-slowest diode to even potentially cause a problem. That would take some awfully slow (and mismatched) diodes!

AL N1AL

521. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 03:51:24 UTC
From: dzarda@saucer.cc.umr.edu
Message-ID: <1994Mar4.035124.2863@umr.edu>
Source record: 118460

Jeffrey D. Angus (jangus@skyld.grendel.com) wrote:

: In article <1994Mar3.004716.5198@umr.edu> dzarda@saucer.cc.umr.edu writes:

: > Blue Skies, BLACK DEATH, DON'T GO SPLAT!!
: > "the Fallman"
: > Don Zarda
: > UNITED STATES PARACHUTE ASSN. MEMBER C-23224
: > dzarda@umr.edu

: Hey DOn, is it true that every parachute is guarenteed to open on impact?

Don't know bout that, I haven't impacted, YET!!
Don Zarda

522. Vertical Antenna??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 06:15:56 UTC
From: Steve Kittelsen <sak1@delphi.com>
Message-ID: <ZC1J3m0.sak1@delphi.com>
Source record: 118462

I would like to get some feedback on a vertical antenna for the reception of the 108-138 MHz aircraft band. I currently use a discone antenna, that seem to work much better than a tuned dipole. I thought the discone antenna had unity gain?? I want an antenna with high gain, omni-directional, vertical polarity. I have seen 144 MHz antennas with a gain of 9 dB, but what will the gain be at 125 MHz?? How can I make one or where can I get one? Please help.

****
* STEVE KITTELSEN ________ *
* _ /\ /\ 1711 S.11th No.134 \ / *
* / /\ \/ BOZEMAN, MT 59715 \ / *
* I I I I SAK1@DELPHI.COM \ / *
* \ _\/_ / +Open Your Mind+ \/ *
****

523. Re: Vertical Antenna??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 15:20:22 UTC
From: julian@bongo.tele.com
Message-ID: <1994Mar4.152022.1213@bongo.tele.com>
Source record: 118463

In article <ZC1J3m0.sak1@delphi.com> Steve Kittelsen <sak1@delphi.com> writes:
>I would like to get some feedback on a vertical antenna for the reception of
>the 108-138 MHz aircraft band. I currently use a discone antenna, that seem
>to work much better than a tuned dipole.
Must be something wrong with your dipole. I assume it is set
up as a vertical?

> I have seen 144 MHz antennas with a gain of 9 dB, but what will
>the gain be at 125 MHz?? How can I make one or where can I get one?

A 144 MHz antenna will probably have little gain at 125 MHz.
But these "High Gain Omni-Directional Verticals" are neither. They
exhibit gain because they are not omni-directional.

These antennas exhibit a squished pattern that looks to the
horizon. They have a nice big null overhead. This is not what you want
to listen to aircraft, unless you intend to listen to aircraft on the
ground that are all around you. If you wish to listen to aircraft on
the ground at an airport, then a Yagi is what you need.

For overhead omni-directional listening on the aircraft bands,
I suggest a groundplane.

If you want to know what the best antenna is, go to an
airport. Look at their antennas. Bear in mind that the Air Traffic
Controllers have the following criteria: Bigger budget than you, 100%
reliability, best performance. Those criteria are usually met with
groundplane and hairpin groundplane antennas.

If you really want to do it right, ask at their radio shop -
which will be on the airport property or nearby - what make and model
they use.

--
Julian Macassey, N6ARE julian@bongo.tele.com Voice: (310) 659-3366
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

524. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 18:34:14 UTC
From: wjc@ll.mit.edu
Message-ID: <1994Mar4.183414.15076@ll.mit.edu>
Source record: 118464
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <jyoungberg.1.000B87CC@draper.com>, jyoungberg@draper.com (James W. Youngberg) writes:
|> I've followed various GPS threads as they've come and gone. In order to pose
|> volume/price arguments to folks in the business, what would be the size of the
|> amateur market for GPS engines?
|>
|> Presume an engine consists of the entire RX, minus antenna, including a data
|> port (probably NMEA 0183), on a PC board. Examples are currently manufacured
|> by Rockwell, Magellan, Canadian Marconi, Plessey, and Trimble, among others.
|> Marketed in the $500 class for single-unit quantities.
|>
|> Skip, K1NKR
|>

How many channels would I get for $500?

Bill Chiarchiaro N1CPK
wjc@ll.mit.edu

525. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-04 23:38:11 UTC
From: hunter@s07.es.llnl.gov
Message-ID: <2l8gp3$ikl@lll-winken.llnl.gov>
Source record: 118465
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

The Garmin GPS-10 receiver board is less than $350 in quantities of 2 (two). It is an 8-channel
receiver with NMEA output. They can supply a program that runs on a PC and displays the data
from the GPS-10, connected to one of the serial ports. The above price includes the antenna.
One of the reasons that we like it is that is only consumes 1 watt (0.2A @ 5V). Garmin can be
reached at (800)800-1020. Note that this is not an endorsement, etc., etc.....

Steven Hunter

526. Tuner-tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 01:00:03 UTC
From: rfm@urth.eng.sun.com
Message-ID: <RFM.94Mar4170003@urth.eng.sun.com>
Source record: 118466

In the March QST, kinda near the back, there's an ad from Palomar for a gadget called the "tuner-tuner." (For all I know this ad has been in every QST since 1927, but this is the first time *I* noticed it.)

What the ad says this gadget does is allow one to adjust one's antenna tuner precisely without having to transmit. Operation is described as:

1. Put the gadget between the transceiver and the tuner (I assume they mean electrically, not physically)
2. Flip the knob on the gadget from OFF to TUNE. A strong noise will be heard in the transceiver's speaker.
3. Twiddle knobs on the antenna tuner until the noise goes away.
4. Flip the knob on the gadget from TUNE to OFF.
5. Transmit away, at 1:1 SWR.

It's not stated, but I assume that the tuner will be adjusted for the frequency the receiver was tuned to.

Now, my questions:

1. just how does this gadget work?

It seems to me that what it's doing is sending low-power broadband noise out through the tuner, line, and antenna, and passing the reflected noise back to the receiver. When the the tuner is adjusted right, the impedance matches and there is no reflections, hence no noise for the receiver to hear. But how does the receiver not hear the original noise source (when answering, be aware I've not yet figured out how a SWR meter manages to measure direct and reflected power separately either.)

2. how can I build one? [this is why this is in r.r.a.homebrew and not .misc]

Looking at the picture, there's a knob and a case. Palomar's asking $100 for this beast, so given labor, Palomar's markup, and the cost of knobs and cases these days, I figure total parts cost has to be about $10 max.

I have a sneaking suspicion that this is a well known hack that's been around since CW first replaced spark, but I haven't found anything in the books I've looked at (ARRL Handbook and Antenna Book.)

Rich
--
Rich McAllister (rfm@eng.sun.com)

527. Re: Paralleling Power Diodes ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 04:20:09 UTC
From: hale@btree.brooktree.com
Message-ID: <1994Mar5.042009.8053@btree.brooktree.com>
Source record: 118467

In article <CLyBM1.Cy7@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>Alan Anderson (alana@u018.me.vp.com) wrote:
>: >
>: >I wouldn't count on 3A with 3 diodes using that technique,
>: >but you should get something better than 1A.
>: >
>: >AL N1AL
>: >
>
>: What would you recommend using for 3A at 4KV, I have seen some
>: 2Amp 10000 volt "double diode" bridges in Nebraska surplus. These are
>: setup for heat sink mounting. 2 in parallel ?
>
>I would just use a series string of lower-voltage 3A diodes.
>
>I hate to bring up the next point because, since it violates conventional
>wisdom, it is bound to draw some flames. But what the heck...
>
> You don't need to put resistors in parallel when you string
> diodes in series.
>
>There, I've said it.
>
>Think about it. When you over-voltage a diode, it acts like a high-voltage
>Zener and clamps at its breakdown voltage. So long as the current is
>limited, no permanent damage occurs. Since all the diodes in the string
>are in series, the current through each is the same. The current will be
>limited to the leakage current of the lowest-leakage diode in the string,
>typically a few microamps. Unless you exceed the SUM of the breakdown
>voltages of all the diodes in the string, no catastrophic breakdown
>will occur.
>
>AL N1AL

Commercially available high voltage rectifier modules consist
of a lot of conventionla silicon rectifer dice stacked in
cascade _without_ any equalizing components in parallel with
the individual rectifiers. Manufacturers can do this because the
dice all come from the same wafer and are therefore very well
matched, both in terms of capacitance and in terms of leakage.

There is a real problem in series stacks of _unmatched_ rectifiers.
When a recifier is avalanched a lot of charge carriers are created
and injected into the junction. It takes time for these carriers
to be swept out by the field. This can cause significant amounts

of current to flow in the rectifer at the wrong time, and that leads to unexpected heating of the device. Whether this is a problem depends on the luck of the draw for most of us.

Bob Hale hale@brooktree.com

528. Re: Series Diodes (was Re: Paralleling Power Diodes ?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 04:29:44 UTC
From: hale@btree.brooktree.com
Message-ID: <1994Mar5.042944.9125@btree.brooktree.com>
Source record: 118318

In article <CM2Jo6.LEr@srgenprp.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
[about series-connected rectifier strings]

>Yes, I have seen degradation of a transistor's beta when the base-emitter
>junction is reverse-biased for a relatively long period of time.
>Frankly, I'm not sure what causes that effect. But I have never heard
>of degradation of diode characteristics from reverse-biasing as long as
>the current is held to a low value. Don't forget, we're talking only a
>few microamps here, since the current flow will be limited by the
>lowest-leakage diode in the string.

Am I seeing a "mixed metaphor" here? Leakage current flows in
a reverse biased rectifier at voltages _below_the_avalance_voltage_.
When a good junction avalanches, its dynamic resistance becomes
very low and the current will rise to as much as the source can
provide. There is some similarity to a spark gap switch - the
resistance is very high until it is triggered, and then the
resistance becomes very low.

Avalanching a junction does degrade it. The first thing noticed
is usually that the leakage increases. If it's a low noise
transistor the noise figure degrades. If it's a bipolar transistor
the beta degrades.

Bob Hale hale@brooktree.com

529. Ramsey SA-7 broadband preamp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 10:30:25 UTC
From: eb795@cleveland.Freenet.Edu
Message-ID: <2l9n01$rft@usenet.INS.CWRU.Edu>
Source record: 118319

Hello.

I would like to know if any of you here on r.r.a.h have assembled
and used the Ramsey SA-7 preamp.
I am planning to get a few of them and use them for TV and FM DX.
I will have one for FM, one for UHF, and one for VHF.
I have three seperate antennas for those bands, and seperate feed
lines too.

Will it be difficult to design a filter system where only the de
esired band(ie FM, or UHF TV) get amped by the SA-7?

I plan on buying three of them, and I would like to know what I
am getting into before I plunk down the $$$.

By the way, here are some specs:

freq range:100kHz to 1000mHz
gain:>20dB
noise figure: < 4dB
NEC microwave transistors are used in the design.
They are $14.95 each in kit form from Ramsey.
Ramsey is at: (716)924-4560

Thanks.
--
Eric Matthews
eb795@cleveland.freenet.edu

530. Re: Tuner-tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 15:12:05 UTC
From: tgm@netcom.com
Message-ID: <tgmCM7685.Iuw@netcom.com>
Source record: 118320

Richard McAllister (rfm@urth.eng.sun.com) wrote:
: 2. how can I build one? [this is why this is in r.r.a.homebrew and not .misc]

You can build one for about $10 or so. It is just a variation
on a noise bridge. My 1990 ARRL Handbook has a schematic. RadioKit also
sells a noise bridge. Or you could get the MFJ noise bridge for
about $50. Set the controls on the noise bridge to 0 reactance
and 50 ohms resistance before you tune. I built one from the
Ham Radio Magazine articles a few years ago. It really works.

Thomas Ki4N

531. Re: FM BROADCAST BAND RF AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 16:55:46 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CM7B10.E2I@iat.holonet.net>
Source record: 118321

ez006683@chip.ucdavis.edu (Daniel D. Todd) writes:

>Donald Zarda (dzarda@saucer.cc.umr.edu) wrote:

>: Does anyone have plans or know of a way to boost the output of the
>: BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
>: need to boost the signal to reach about 3 miles. I need something very soon!
>: If so please reply. Thanks.

>sniff, sniff, do you smell smoke?
>:-)

>Dan

Whoa, now! The Friendly Candy Company has something to say about this.
There are strict power limits for such unlicensed devices broadcasting in
commercial broadcast bands. Maybe somebody else has specifics, but I'm
almost certain it's real flea power and a definite limit on antenna and
feedline length.

You NEED it very soon? Hmmmm.

John K0JD

532. Need info on Toshiba TC571000D-20 EPROM

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-05 19:55:41 UTC
From: agh0792@ucs.usl.edu
Message-ID: <1994Mar5.195541.14535@usl.edu>
Source record: 118322
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I am working with a system that uses a TOSHIBA TC571000D-20
EPROM. I was only able to find a National Semiconductor EPROM
chip - NM27C010Q200. The latter is a 1 meg (128Kx8) CMOS EPROM
200 ns. I was told that this chip would work as a substitute for
the Toshiba chip. Can anyone verify that? I have the pin-out for
the National Semiconductor chip. Does anyone have the pin-out / other
info for the Toshiba Chip?

Thanks in Advance.
I need to know the answer this weekend if possible.
Regards,
aghill@usl.edu
p.s. the chips each have 32 pins.

.

533. Power FET Gate Modulation - Need Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 01:20:54 UTC
From: frbspd@crl.com
Message-ID: <2ldvhm$7pf@crl.crl.com>
Source record: 118323

I would appreciate any information on the use of power type FETS (Hexfet, TMOS, etc.) in AM transmitter applications. I have some references for this but they are rather incomplete, I am particulary interested in gate modulation techniques to eliminate the sereis type modulator.

Thanks

Stephen Dunifer

534. 400 Hz xtal ladder filter, help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 02:51:55 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar7.105155.1@ntuvax.ntu.ac.sg>
Source record: 118324
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

Hi,

My homemade QRP xcvr has a 600 Hz BW xtal ladder filter consisting of 4 12.0000 MHz xtals. However I still find it hard to work pile-ups due to insufficient selectivity. I am planning to change it to 400 Hz. Does anyone know how much improvement I can expect to see? Also, how can this be done in the easiest way? Do I need to add xtal stages or just change to capacitor values?

72 es 73,
Daniel

535. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 04:47:08 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2lebkc$kmk@hpscit.sc.hp.com>
Source record: 118325
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

The Motorola GPS receiver is less than $150 in 100's. It has six
channels and just about all the features you would ever want.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

536. Re: 400 Hz xtal ladder filter, help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 14:02:33 UTC
From: zlau@arrl.org
Message-ID: <1994Mar7.140233.4914@arrl.org>
Source record: 118326
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

asirene@ntuvax.ntu.ac.sg wrote:
: Hi,

: My homemade QRP xcvr has a 600 Hz BW xtal ladder filter
: consisting of 4 12.0000 MHz xtals. However I still find it hard to
: work pile-ups due to insufficient selectivity. I am planning to
: change it to 400 Hz. Does anyone know how much improvement I can
: expect to see? Also, how can this be done in the easiest way? Do
: I need to add xtal stages or just change to capacitor values?

You probably won't see any improvement in the pileups. I am assuming that lots of stations want to work Singapore (9V1 for DX types). Problem is, most are probably calling on the same frequency (within 100 Hz), so a tighter filter won't help.

What will help is to have an RIT control and continually vary your frequency receive frequency over a narrow frequency range, perhaps a kHz or two.

However, 12 MHz ECS clock crystals sold by Digi-Key do make nice Cohn filters. Use 3 crystals and 470 pF capacitors. The input inpedance and output impedance just happen to be close to 50 ohms. (Some people just get lucky). Cascading two of them, I got a 3 dB BW of 379 Hz and a 6 dB BW of 427 Hz.

Finally, since you asked, adding more filters will improve the skirt selectivity, making stations out of the passband weaker. 4 crystals is probably OK for a CW rig, though I use 6 in one rig and 7 in another. Increasing the capacitor values will decrease the bandwidth, but will also decrease the impedance. Impedance matching is important to maintain the proper filter shape.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

537. Re: Converting cheap-o walkie-talkies (stabilizing crystals?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 16:08:40 UTC
From: jsherman@nyx10.cs.du.edu
Message-ID: <1994Mar7.160840.28123@mnemosyne.cs.du.edu>
Source record: 118327

Does anyone know enough about crystals to be able to explain to me what exactly I'm doing when I replace the 49.86MHz crystal with a 10.656MHz crystal and I get a 53.994MHz stable transmit? I presume it's the freq*5 with a slight offset due to crystal innacuracies. Why does it go 5x though? Because the rest of the circuit is tuned for ~50MHz? Are there any good references for this kind of project?

Thanks!

Jon (N9VWF)

538. re.radio.amateur.homebrew site?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 16:26:10 UTC
From: bon@paradox.win.net
Message-ID: <43@paradox.win.net>
Source record: 118328

I am pretty new in the group and I don't know if old posts are
stored in a specific site.
Specificaly I got a reference from a post received by the group
"Optimal FSK shift" that I'd like to read.
I am interested in DSP aplications for ham radio (modems,
filtering...).

--
Joaquin Bonilla Phone: (601)- 4692565
173 Oak Park Dr. Internet:bon@paradox.win.net
Forest, MS 39074, USA Salud !

539. DSP filtering for data communications

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 18:42:12 UTC
From: bon@paradox.win.net
Message-ID: <44@paradox.win.net>
Source record: 118329

I am trying to work out a DSP filter applied to ham radio data communications (Amtor, RTTY, Pactor and Packect modes).
I am considering the following performances :

- AMTOR/NAVTEX:FIR Band-pass filter with 60dB att. at 60Hz out of the corner freq, center freq at 2210Hz, bandwith of 300Hz (corner freq. at 2260Hz-2360Hz)

- HF Packet: Two different band-pass filter could be selected:
*[2310-2110 mark-space]: BP , 60dB att, center freq. at 2210Hz, bandwith of 900Hz, (corner freq. at 1760-2660Hz).
*[1445-1275 mark-space]: BP, 60dB att., center freq. at 1360Hz, bandwith of 900Hz (corner freq. at 1810-1725Hz)

- RTTY: Multiple FIR band-pass filters, 60dB att., bandwiths of 135,150,180,225,300, 600 and 900Hz. Central freq. at 1360, 1700, 2340, 2210 and 2550.

- PACTOR: BP with 60dB att., center freq. at 2210, bandwith of 600Hz (corner freq. at 1910-2510Hz.

- BPSK Packet (A0-13): BP, 60dB, central freq. 1600Hz, bandwiths of 150, 200, 300, 600, 1200 and 2400Hz.
The idea is to cover most of the formats supported by different TNC manufacturers.
To calculate the effective bandwith of the filter I used Bfsk= 3*Bauds, Bpsk=2*Bauds (required bandwith of the channel).

Questions:
- Do you guys agree with these settings?
- How calculate the group time delay for the used FIR filters (around 400 taps with a Kaiser window)
- What would be the maximum delay allowed for AMTOR (i.e) operation?.
- Any suggestion?.

73

--
Joaquin Bonilla Phone: (601)- 4692565
173 Oak Park Dr. Internet:bon@paradox.win.net
Forest, MS 39074, USA Salud !

540. re: Help Understanding FM SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 19:30:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2D7B8207@msmail.uthscsa.edu>
Source record: 118330

>I've read the RSGB's RAE manual, and still have difficulty with their
>descriptions of FM and SSB. In FM, as I understand, the frequency of the
>carrier is modulated by the amplitude of the speech. So why does the
bandwidth
>of the RF signal matter? If you have, say a 28Mhz carrier and the bandwidth
of
>the Rf signal is 5kHz, why should that limit the audio bandwidth to 5Khz?
If
>you send a 20kHz audio signal surely the RF signal would just oscillate
>between 28Mhz+-5kHz at 20kHz? I realise that filtering the output is
important
>to remove any harmonics, but as you can see I'm quite confused about the
>bandwidth issue.
>
>The other thing is SSB. I get the general idea of using power more
efficiently
>by sending half the audio waveform as the other half is going to be a
mirror
>image, and removing the carrier as we want to concentrate power on the
signal
>instead of the carrier. What I don't get is how one removes the carrier and
>then adds it back again. Can someone explain that, please?
>
>Cheers,
>Jason
>--
> Jason L Saunders - President, Warwick Thrash n' Burn Society
> email: maupb@csv.warwick.ac.uk - PGP 2.2 key available on request

> snail: 57 Gordon Street, Earlsdon, Coventry CV1 3ET, ENGLAND
> "At least you know a sicko's committed"
>
Jason,
When you generate a SSB, and AM for that matter, signal the audio
information that modulates the carrier also mixes with that carrier to give
you
"bandwidth." To generate a 20khz tone on a 28MHz SSB signal, you need to
have
20khz of bandwidth. FM is very similar, instead of generating amplitude you
generate
changes in the frequency. Thus the name Frequency Modulation, as I'm sure
you know. FM however, has a multitude of sidebands instead of two. FM gets
much more complicated in terms of bandwidth vs modulating frequency. Might
I

suggest the ARRL handbook for more details.

73
Kevin WB5RUE
muenzlerk@uthscsa.edu

541. Re: 400 Hz xtal ladder filter, help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 20:33:56 UTC
From: alanb@sr.hp.com
Message-ID: <CMBAGL.448@srgenprp.sr.hp.com>
Source record: 118331
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:
: Hi,

: My homemade QRP xcvr has a 600 Hz BW xtal ladder filter
: consisting of 4 12.0000 MHz xtals. However I still find it hard to
: work pile-ups due to insufficient selectivity. I am planning to
: change it to 400 Hz. Does anyone know how much improvement I can
: expect to see? Also, how can this be done in the easiest way? Do
: I need to add xtal stages or just change to capacitor values?

: 72 es 73,
: Daniel

542. Re: 400 Hz xtal ladder filter, help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 20:56:18 UTC
From: alanb@sr.hp.com
Message-ID: <CMBBHv.4sK@srgenprp.sr.hp.com>
Source record: 118332
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

: asirene@ntuvax.ntu.ac.sg wrote:

: : My homemade QRP xcvr has a 600 Hz BW xtal ladder filter
: : consisting of 4 12.0000 MHz xtals. However I still find it hard to
: : work pile-ups due to insufficient selectivity. I am planning to
: : change it to 400 Hz. Does anyone know how much improvement I can
: : expect to see? Also, how can this be done in the easiest way? Do
: : I need to add xtal stages or just change to capacitor values?

Going from 600 Hz to 400 Hz may not be enough of a change to make
a significant difference. You might want to shoot for a bit narrower.

I'm assuming the circuit has the capacitors in series between input
and output with shunt capacitors at input/output and the junctions
of each pair of crystals. Increasing the capacitance should narrow
the bandwidth. It will also lower the resonant frequency a bit
and increase the insertion loss slightly.

Zack Lau (KH6CP) (zlau@arrl.org) wrote:

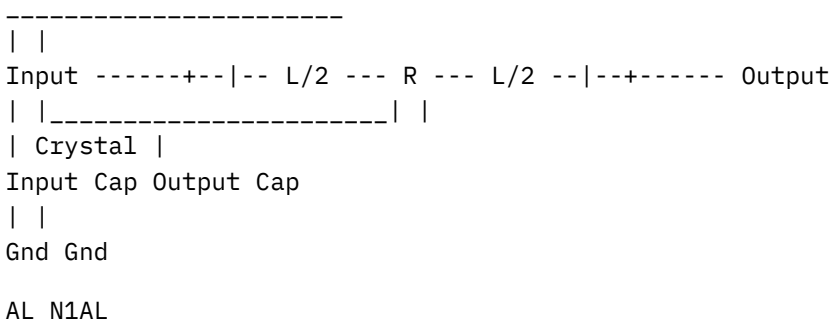
: ... Increasing the capacitor values will
: decrease the bandwidth, but will also decrease the impedance.
: Impedance matching is important to maintain the proper filter
: shape. ...

To clarify, the load impedance is not really matched to the crystals,
it is matched to the source. Consider a single-section series crystal
with no matching capacitors. So long as the crystal series resistance
is small compared to the load resistance, the crystal has no effect
on source/load match at resonance.

When you add the shunt capacitors on input/output, you basically have
added L-networks at both ends, with the crystal providing the required
series inductance to effect the proper match. (The crystal looks
inductive above resonance.) The "L-network" transforms the 50 ohm
source/load impedance down to a lower value, which increases the
loaded Q of the crystal, narrowing the bandwidth. That also increases
the insertion loss, which is proportional to (loaded Q) / (unloaded Q).
The bigger the capacitor, the greater the impedance transformation and
the narrower the bandwidth.

In the following "schematic", L is the net inductance of the off-resonant
crystal, and R is the crystal's effective series resistance:

```
L-network L-network
|<---------->| |<---------->|
```



AL N1AL

543. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 22:13:55 UTC
From: alanb@sr.hp.com
Message-ID: <CMBF38.7Iw@srgenprp.sr.hp.com>
Source record: 118333

Alan Bloom (alanb@sr.hp.com) wrote:

[Regarding putting rectifiers in series for higher voltage rating.]

: I don't think the [shunt] capacitors are needed either. ...

: The only other reason I have heard for putting cap's across the diodes
: is in case different diodes in the string turn off at different times
: due to different carrier lifetimes.

I talked with our resident power supply guru about this. He basically
agrees that the shunt resistors and capacitors are a myth. But he did
recommend high-avalanch-energy diodes that are designed with short
carrier lifetimes. 1N4000-series diodes tend to have a very long
carrier lifetime which can cause EMI and overheating. He thought
it was not so much a reliability concern as an EMI problem.

AL N1AL

544. Re: Tuner-tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 22:37:21 UTC
From: dbashaw@synoptics.com
Message-ID: <CMBG6A.G6J@synoptics.com>
Source record: 118334

Thomas Ki4N wrote:
>You can build one for about $10 or so. It is just a variation
>on a noise bridge. My 1990 ARRL Handbook has a schematic. RadioKit also
>sells a noise bridge. Or you could get the MFJ noise bridge for
>about $50. Set the controls on the noise bridge to 0 reactance>
>and 50 ohms resistance before you tune. I built one from the
>Ham Radio Magazine articles a few years ago. It really works.
>
>Thomas Ki4N
I thought about one of those, but I thought there must be a 0 $ answer.
So on my rig I try to get the same results by: (FWIW)

1: RF gain at minimum
2: AF gain at maximum
3: advance RF gain until some noise is heard.
4: adjust the antenna tuner for maximum noise. This should be a good starting place.
5: start checking swr at low power (to be considerate of others and your finals).

Good luck
Dave
wa6qwl

545. Using switcher PS for 12 volt HF rig power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-07 22:42:47 UTC
From: au156@yfn.ysu.edu
Message-ID: <2lgal7$o6i@news.ysu.edu>
Source record: 118335

Has anyone ever tried to use a switching type power supply to handle the 12 volt, approx. 20 amp requirement of typical 100 watt SSB HF rigs?

I realize that this is not customary, and is probably not recommended, that's why I'm asking.

Any problems with whine, poor transient regulation, etc?

Hank, N1LTV

546. Re: Using switcher PS for 12 volt HF rig power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 02:10:22 UTC
From: alanb@sr.hp.com
Message-ID: <CMBq1E.Eyo@srgenprp.sr.hp.com>
Source record: 118336

Don Montgomery (donrm@sr.hp.com) wrote:
: Hank Riley (au156@yfn.ysu.edu) wrote:

: > Has anyone ever tried to use a switching type power supply to handle

: Yes, my entire HF station (minus the 30L1 linear) runs off a 12VDC/88Amp
: Lambda switching supply, ...

: Everything runs off this supply including the RV 12VDC desk lamp, 2M
: FM rig and its 100W amp.

You left out the beer cooler. What, no Peltier devices?

AL N1AL

547. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 05:21:31 UTC
From: jlw3@cec3.wustl.edu
Message-ID: <2lh20r$auf@bigfoot.wustl.edu>
Source record: 118337
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: The Motorola GPS receiver is less than $150 in 100's. It has six
: channels and just about all the features you would ever want.

: Rick Karlquist N6RK
: rkarlqu@scd.hp.com

The question is: who's going to be buying in 100's?

548. Re: Using switcher PS for 12 volt HF rig power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 10:38:05 UTC
From: dgf@netcom.com
Message-ID: <dgfCMCDJH.K12@netcom.com>
Source record: 118338

In article <CMBLpK.C37@srgenprp.sr.hp.com> donrm@sr.hp.com (Don Montgomery) writes:
>Hank Riley (au156@yfn.ysu.edu) wrote:
>
>> Has anyone ever tried to use a switching type power supply to handle
>
>Yes, my entire HF station (minus the 30L1 linear) runs off a 12VDC/88Amp
>Lambda switching supply, and yes, I had to filter the switching noise

I used one of these to power a Metron MA-1000 amplifier (12V, big amps during TX)... I got alot of loud popping noise (accoustic) from the supply during SSB current swings (along with unstable output voltage). Not sure if it was RF getting back into the supply or the dynamic load current, but anyway I did not continue using the supply for this application. 73 Dave WB0GAZ.

549. Reducing Tube Filament Voltage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 13:50:14 UTC
From: drs@ccd.harris.com
Message-ID: <1994Mar8.135014.15825@ccd.harris.com>
Source record: 118339

In my reading about linear amplifier design and construction I have noticed in a couple of writings that if the filament voltage on say, a 3-500Z tube, is reduced from the typical 5.0 VAC to around 4.8 or 4.9 volts, tube life can beextended several fold.

In an article by AG6K on QSK for the TL-922 and SB-220 he mentions that a good method of reducing the filament voltage (at the socket) is by using smaller guage wire from the transformer to the socket. He mentions that it should have good (teflon) insulation. My question is: Is this really the best way to reduce the voltage? Seems like varying line voltage would necessatate using some sort of rheostat? Any ingenious methods out there? I am planning onusing a step-start relay to initially start the filament voltage low to reduce inrush current on a 4-1000 tube.

I have already implemented his method of biasing the tubes by putting a string of diodes in the cathode return line. This is in place of using a high wattage zener. This works fine, as you can fine tune the idle current on the tubes by the number of series diodes.
--

Doug Snowden
drs@ccd.harris.com
N4IJ

550. Re: Using switcher PS for 12 volt HF rig power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 15:09:02 UTC
From: ignacy@ux2.cso.uiuc.edu
Message-ID: <2li4ee$e2t@vixen.cso.uiuc.edu>
Source record: 118340

au156@yfn.ysu.edu (Hank Riley) writes:

>Has anyone ever tried to use a switching type power supply to handle
>the 12 volt, approx. 20 amp requirement of typical 100 watt SSB HF
>rigs?
>
>I realize that this is not customary, and is probably not
>recommended, that's why I'm asking.
>
>Any problems with whine, poor transient regulation, etc?
>
> Hank, N1LTV

I once used a 3 lb switching power supply made for Yaesu 757. It worked
fine with good antennas. I purchased it because I wanted a light rig;
a mobile rig with a regular PS is heavier than a rig with a built-in PS.
With room or attic antennas this PS generated extensive noise despite
multi-stage filtering. Imagine my consternation when I tried to show my
rig in an elementary school using a few feet of wire and all the children
could hear was noise! Also the PS was once damaged by a static. I replaced
this PS by a one with transformer, and now ithe new PS's buzzing noise and
a large weight irritate me too.

Ignacy Misztal, NO9E
University of Illinois
ignacy@uiuc.edu

551. Center Tap RF transf.?WHERE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 15:28:47 UTC
From: pendlewe@ac.wfu.edu
Message-ID: <2li5jf$ql1@quad.wfunet.wfu.edu>
Source record: 118341

It is surprisingly difficult to find a center tapped transformer for use at ~1/2 to ~2.5 MHz. Help?

Thanks
Bill Pendleton

Wake Forest Univ.
Physics Dept.

552. Re: Tuner-tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 16:31:01 UTC
From: dbraun@scdtintel.com
Message-ID: <2li985$seu@inews.intel.com>
Source record: 118342

In article <CMBG6A.G6J@synoptics.com>, dbashaw@synoptics.com (David Bashaw) writes:
|> I thought about one of those, but I thought there must be a 0 $ answer.
|> So on my rig I try to get the same results by: (FWIW)
|>
|> 1: RF gain at minimum
|> 2: AF gain at maximum
|> 3: advance RF gain until some noise is heard.
|> 4: adjust the antenna tuner for maximum noise. This should be a good starting place.
|> 5: start checking swr at low power (to be considerate of others and your finals).

I have been disappointed when trying to tune the tuner by listening. It seems
to be due to:

1: The input impedance of the receiver is often much different than 50+0j ohms.
2: You can barely detect a 3 db signal change (even with the AGC off), and
a 3 DB loss probably corresponds to something like 3:1 SWR (I don't
have my handy little Forward/Reflected SWR nomograph handy...)

Sometimes if I am tuned correctly for transmission, I can get a noticeably
better receive signal by re-adjusting the tuner...

--

Doug Braun Intel Design Technology
408 765-4279

dbraun@scdt.intel.com

/ decwrl \
| hplabs |
or maybe: -| oliveb |- !intelca!mipos3!cadev6!dbraun
| amd |
\ qantel /

"There is no human problem which could not be solved if
people would simply do as I advise." -- Gore Vidal

553. Re: Using switcher PS for 12 volt HF rig power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 16:37:07 UTC
From: dbraun@scdtintel.com
Message-ID: <2li9jj$seu@inews.intel.com>
Source record: 118343

In article <CMBLpK.C37@srgenprp.sr.hp.com>, donrm@sr.hp.com (Don Montgomery) writes:
|> Hank Riley (au156@yfn.ysu.edu) wrote:
|>
|> > Has anyone ever tried to use a switching type power supply to handle
|>
|> Yes, my entire HF station (minus the 30L1 linear) runs off a 12VDC/88Amp
|> Lambda switching supply, and yes, I had to filter the switching noise
|> (harmonics) off the AC input and DC output.

What a beast of a power supply... Mine is only a 42 amp Lambda model.
I don't have any extra filtering, except one toroid on the rig's power cable,
and I have no problem with RFI. BUT, if your antenna is right next to the PS,
you will hear some noise.

I do have a wierd problem though: The PS sort of acts like a speaker.
on SSB, it buzzes in step with the voice peaks, and on AM, I bet you
could almost make out what I am saying. Also, it buzzes when the toaster
in the kitchen is on. This is handy for letting me know then the toast is
ready...

You see millions of the 5 volt models at swap meets and surplus places.
A lot of people use 3 of them in series, each one turned down half a volt
or so.

Doug Braun Intel Design Technology
408 765-4279

dbraun@scdt.intel.com

/ decwrl \
| hplabs |
or maybe: -| oliveb |- !intelca!mipos3!cadev6!dbraun
| amd |
\ qantel /

"There is no human problem which could not be solved if
people would simply do as I advise." -- Gore Vidal

554. Making LEX work...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 21:42:37 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <62032@uugate.wa7slg.ampr.org>
Source record: 118344

Well, I have obtained a copy of FLEX and made it compile (When the person who wrote the MAKEFILE said that it *should* compile obviously hadn't tried... under MeSsyDOS, that is...) It seems to produce the "sample" file OK, but there appears to be something wrong...

First, you see the line:

#define yyleng (yy_cp - yy_bp)

Then, as if to be clever, you see lines in the code that do things like:

yyleng = 1;

AND (it gets better...)

yyleng++;

Yeah, right!

Either this version of FLEX is 'broke, or the lexical construct is flawed, or was written for a different version...

I grabbed CUG290 from a local BBS, and it included a DOS compilation, but it somehow failed to include a file called "skelcom.h" An archie search has failed to locate that...

BTW, I'm trying to compile the "z8dev" package. This was found on keos.helsinki.fi. It requires both LEX and YACC... The YACC was no problem (I used BYACC...)

Thanks,

<Clint>

555. CATV freq. shifting device needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-08 23:52:16 UTC
From: cdls@netcom.netcom.com
Message-ID: <CDLS.94Mar8155221@netcom.netcom.com>
Source record: 118345
Cross-posted to: rec.radio.amateur.homebrew,alt.dcom.catv

Greetings,

I have a strange request. It is not directly related to amateur radio, but the folks here (and on catv) will probably have the most experience in doing things of this nature. :)

Her in San Jose, CA, we have an old CATV plant that uses two cables due to poor bandwidth on each (i.e. 35 channels on each cable). Therefore, in order to change channels, you usually have to get up and hit an A/B switch to switch which cable is going into the TV (i.e. to go from a Fox channel to CNN, you have to go from 12A to 12B). This makes a cable-ready TV pretty useless. What I want to do is take the 'B' channels and do an IF add to move them up the CATV freq spectrum and combine the two cables into one. So instead of having 1-35A and 1-35B, we have 1-35 and 40-75, for example. I know the CATV spectrum is not contiguous. Has anybody done this, or have a good idea on how to do it. Please respond directly and I will post a follow-up if there is interest. Pointers to plans would be great!

Thank's in advance,
-=Chris

556. Re: Question: Capacitor types??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 09:37:12 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar9.093712.3617@ke4zv.atl.ga.us>
Source record: 118346

In article <CROFTW.3.000A9340@caedm.et.byu.edu> CROFTW@caedm.et.byu.edu (Richard Croft) writes:
>I am collecting some parts for a 35 Watt amplifier kit. The parts list calls
>for several different kinds of capacitors (silver mica, metal clad, disc,
>chip, ceramic, tant). Would someone please tell me if the type of capacitor
>is absolutely necessary or can I just use any type with the proper capacitance
>rating? If I need the special type of capacitor, what is the difference?

Different circuit elements have different requirements. That's why there
are different capacitor types with the same voltage and capacitance ratings.
You have to understand the purpose of a particular capacitor in a given
circuit to determine what type of capacitor is suitable. Silver mica
capacitors are generally used where accuarcy and known temperature
characteristics are required. Disc ceramic capacitors are more likely to
be used in non-critical bypass or coupling circuits. Chip capacitors are
used where low inductance packaging is critical, or where space is very
tight. Tantalum capacitors are used where high values of capacitance in
a small space are needed, such as for power supply filtering or audio
coupling. Metal clad polyester capacitors are used in applications similar
to those for silver mica where stability of value, and often RF current
carrying capacity, are critical parameters. Unless you understand the
reason why a particular capacitor type was chosen for a given design,
use the type specified.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

557. Re: microwave oven magnitron transmiters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 09:38:55 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar9.093855.3697@ke4zv.atl.ga.us>
Source record: 118347

In article <bnowak.763189736@unixg.ubc.ca> bnowak@unixg.ubc.ca (Bradley Nowak) writes:
>Since recieving an amateur rado licence I have developed an interest
>in UHF and microwave communications.
>Along with this new interest I find myself wondering if the magnitron in
>the microwave oven could be employed in a transmiter.
>If it can how and what wave length do they operate at ?

Yes, microwave oven magnetrons can be used for amateur purposes. There
was an article in 73 Magazine detailing a magnetron used for FM ATV on
our 2.3 GHz band.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

558. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 16:06:12 UTC
From: dickrb@lsid.hp.com
Message-ID: <CMEnED.G1M@hpcvsnz.cv.hp.com>
Source record: 118348
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

I will take one too.... Now you are down to 98 units left....

73 de w7wkr

559. Re: Reducing Tube Filament Voltage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 16:51:24 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar9.165124.6749@ke4zv.atl.ga.us>
Source record: 118349

In article <1994Mar8.135014.15825@ccd.harris.com> drs@ccd.harris.com (Doug Snowden) writes:
> In my reading about linear amplifier design and construction I have noticed in a couple of writings that if the filament voltage on say, a 3-500Z tube, is reduced from the typical 5.0 VAC to around 4.8 or 4.9 volts, tube life can beextended several fold.

Yes, but at some cost in tube Gm. Note that reducing the filament voltage is a *must* at VHF+ because back bombardment would otherwise overheat the cathode and lead to *very* short tube life.

> In an article by AG6K on QSK for the TL-922 and SB-220 he mentions that
>a good method of reducing the filament voltage (at the socket) is by
>using smaller guage wire from the transformer to the socket. He mentions that
>it should have good (teflon) insulation. My question is: Is this really the
>best way to reduce the voltage? Seems like varying line voltage would necessatate using some sort of rheostat? Any ingenious methods out there? I am planning onusing a step-start relay to initially start the filament voltage low to reduce
>inrush current on a 4-1000 tube.

That isn't the best method, it's just a cheap way of adding fixed series resistance in the filament circuit. A rheostat is better, and a variac on the primary of the filament transformer is better yet. You want some adjustment capability because you'll want to raise filament voltage as the tube ages and emission drops off. And a variac will allow you to bring up the filaments slowly at power on, which will also increase tube life.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

560. Re: Question: Capacitor types??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 19:19:22 UTC
From: randolph@est.enet.dec.com
Message-ID: <CMEx7t.J50@ryn.mro.dec.com>
Source record: 118350

In article <CROFTW.3.000A9340@caedm.et.byu.edu>, CROFTW@caedm.et.byu.edu (Richard Croft) writes...
>I am collecting some parts for a 35 Watt amplifier kit. The parts list calls
>for several different kinds of capacitors (silver mica, metal clad, disc,
>chip, ceramic, tant). Would someone please tell me if the type of capacitor
>is absolutely necessary or can I just use any type with the proper capacitance
>rating? If I need the special type of capacitor, what is the difference?

Use the right type. There are so many different kinds for different uses...
Tantalum are "solid state" replacements for electrolytics. Large values, low voltage, for decoupling or filtering.
Ceramic disk are cheap, small value, high voltage, for decoupling, filtering, DC blocking, etc. Type NP0 are temperature stable for use in oscillators and such.
Chip caps are leadless, surface-mount types. Very low inductance due to no leads, for UHF/microwave applications.
"Metal clad" sounds like the ceramic compression trimmers used at RF freqs. High quality, low-mid value variables for trimming tuned circuits.
Silver mica are stable mid-high voltage, often used in LC filters.

Get a catalog from Digi-Key or Mouser for a good selection of caps.
800 DIGI KEY 800 34M OUSE
800 344 4539 800 346 6873
-Tom R. N1OOQ randolph@est.enet.dec.com

561. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 21:35:04 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2llfe8$e0p@hpscit.sc.hp.com>
Source record: 118351
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Regarding my posting about Motorola GPS receiver boards:

It seems to have generated a lot of email.

Please get information directly from Motorola's Position
and Navigation Systems Business division if you
are interested. Call (708)-480-8000 and then follow the
directions about calling (800)-4-ONCORE. No, I don't
know what they cost in unit quantities. No, I haven't
hooked one up to my ham station. No, I am not interested
in coordinating a group purchase. I'm just giving you a
pointer to further information. Thank you.

Rick Karlquist N6RK
(I work for HP, not Motorola!)
rkarlqu@scd.hp.com

562. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 21:51:50 UTC
From: rtaylor@ux1.cso.uiuc.edu
Message-ID: <2llgdm$ma4@vixen.cso.uiuc.edu>
Source record: 118352
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>The Motorola GPS receiver is less than $150 in 100's. It has six
>channels and just about all the features you would ever want.

So where do you get one in the "ones". Eagle's is $498 and
has 5 channels as I remember. Just what do you get with more
than 5 channels?

563. Need Filter Tables

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 22:39:24 UTC
From: jjw@seastar.org
Message-ID: <CMF5Lo.AID@seastar.org>
Source record: 118353

I'm working on designing an 8-pole Chebychev crystal filter,
using the equations and techniques in the May 1982 QST article, "A
Unified Approach to the Design of Crystal Ladder Filters."
Unfortunately, the table of normalized k and q values for a 0.1db
ripple filter provided in the article only goes up to order 5.

It seems to imply these (and the pre-distorted tables) are
from the Handbook of Filter Synthesis by Zverev, which I cannot find
locally (the library here is *horrible*). If anybody is familiar with
this article and/or this Handbook and would be so kind as to send me a
copy of the tables, I'd appreciate it very much.

--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org

564. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-09 22:47:45 UTC
From: theeric@netcom.com
Message-ID: <theeric-090394144628@198.211.33.53>
Source record: 118354
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

> > The question is: who's going to be buying in 100's?
> I'm in (provided we find the 100 or better).

Heck I may take 2 of them.

Eric Hegstrom KA7CTO theeric@netcom.com

565. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 03:30:32 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Mar10.033032.19820@vlsi.polymtl.ca>
Source record: 118355
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

I'm in for one too. That 97...

Nick


```
**************************************************************************
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
**************************************************************************
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
**************************************************************************
```

566. DSP CORDLESS & CT2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 03:39:23 UTC
From: shdomaji@kuhub.cc.ukans.edu
Message-ID: <1994Mar9.213923.60128@kuhub.cc.ukans.edu>
Source record: 118356

A recent post, desribed adding extended antenaes to cordless bases, and the handheld with claims of 1000ft, 3000ft, and 1mile increases in range.

This sounds promising with the new digital cordless standard.
Has anyone attempted a similar mod with a DSP cordless.
If so, what results did u have...

Also could someone mail the specs on the CT2 mini-cell phones used overseas.

567. Re: Reducing Tube Filament Voltage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 10:58:32 UTC
From: tgm@netcom.com
Message-ID: <tgmCMG3tL.KvK@netcom.com>
Source record: 118357

Doug Snowden (drs@ccd.harris.com) wrote:
: My question is: Is this really the best way to reduce the voltage?
: Seems like varying line voltage would necessitate using some sort
: of rheostat? Any ingenious methods out there?

I don't know about ingenious but you could try putting in series
two back-to-back germanium rectifiers (or two suitable germanium
transistors diode connected, i.e. base shorted to collector). That
should give you about a 0.2 volt drop.

Thomas

568. Re: GPS Receiver Boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 14:16:38 UTC
From: tvaughan@nyx.cs.du.edu
Message-ID: <1994Mar10.141638.22592@mnemosyne.cs.du.edu>
Source record: 118358
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

gscott@netcom.com (Gavin Scott) writes:

>Jesse L Wei (jlw3@cec3.wustl.edu) wrote:
>: Richard Karlquist (rkarlqu@scd.hp.com) wrote:
>: : The Motorola GPS receiver is less than $150 in 100's. It has six
>: : channels and just about all the features you would ever want.

>: The question is: who's going to be buying in 100's?

>I'll take one. Now you only have 99 more to get rid of!

>Gavin
>--
>Gavin Scott - Quest Software Inc - gavin@quests.com -or- gscott@netcom.com

Make that 98 more to get rid of.

Tom

569. Alliance 5-wire Rotor Motor Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 14:59:01 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Mar10.145901.65354@yuma>
Source record: 118359
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I've accquired an Alliance rotor motor with no control box. The rotor
takes 5 wires, has the rotating mast thru the body and the mast top clamp
on the side of the case. I've been told this style is often used as an
altitude rotor on Satellite setups.
Questions:
1. What voltage does it take to turn the motor? AC or DC?
2. WHat are the pinouts for the five wires?
3. What is the model number or other ID's? (nothing on the case but Alliance).

I can open it up to get the pinouts, but I don't want to burn it out with
the wrong voltage etc.
I'm planning to use it to turn small VHF/UHF antennas.
Any positive responses are greatly appreciated!!!!!
Galen, KF0YJ

570. Re: Converting cheap-o walkie-talkies (stabilizing crystals?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 16:49:30 UTC
From: jfw@ksr.com
Message-ID: <2lnj2q$673@hopscotch.ksr.com>
Source record: 118360

jsherman@nyx10.cs.du.edu (Jonathan Sherman) writes:
>I've been thinking about how most walkie-talkies work at 49.9xxMHz and it
<occured to me that 6m is 50.1 and higher... So - I grabbed a cheap-o
>walkie-talkie (an AM and an FM) from RS, ripped it open and started to see
<what I could do to it. I found that I could tune to a 6 MHz range using
>the little tuning coil inside and my freq. counter. However, I couldn't
<get a stable signal once I deviated very much from the frequency it was
>designed for. Is this due to the crystal?

No, it's due to the fact that you're no longer using the crystal for frequency
control; once you try to pull it too far, the LC components around it become
the dominant control element. What you need to do is get a crystal for 6m
and change the crystal so you don't have to try and pull the frequency so far.

571. Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 18:48:36 UTC
From: cwilliam@helium.gas.uug.arizona.edu
Message-ID: <2lnq24$g8d@auggie.CCIT.Arizona.EDU>
Source record: 118361
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

What equipment is available (relatively inexpensively) for testing
for very low magnetic field radiation, such as around monitors?
Are there are projects in any of the consumer electronic-do-it-
yourself mags?

I don't want to get into a debate about whether such testing is
worthwhile (at least not now).

Thanks,
cwilliam@gas.uug.arizona.edu

572. DownEast Kits ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 18:56:56 UTC
From: boley.d%wec@dialcom.tymnet.com
Message-ID: <boley.d-100394145630@129.228.248.65>
Source record: 118362

Anybody have any comments on the DownEast microwave kits ??

573. PC or old Mac conversion to oscilloscopes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 19:06:07 UTC
From: rees@ccr-p.ida.org
Message-ID: <2lnr2v$4ra@growler.ccr-p.ida.org>
Source record: 118363

Can someone tell me where or how I can find inexpensive software which will allow me to use my old Macintosh 128k (upgraded years ago to 512k) as a simple, functional oscilloscope. I would like to do some simple experiments with my children, probing electrical circuits or exploring speech signals. Surely there is some way to easily use the microphone jack as a source of input. I need to sample the signal being probed, write to a file, then use that file to create a graphical display of the signal. Maybe one can do it in real time also. Any help would be appreciated, I have this old mac with which I can do nothing useful and this would be a worthwhile project. If the mac can not be used this way what about my much newer PC?

574. Re: Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 22:04:31 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Mar10.220431.120595@yuma>
Source record: 118364
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <2lnugo$hv4@reznor.larc.nasa.gov> kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
>In article <2lnq24$g8d@auggie.CCIT.Arizona.EDU> cwilliam@helium.gas.uug.arizona.edu (Catherine S Williams) writes:
>>What equipment is available (relatively inexpensively) for testing
>>for very low magnetic field radiation, such as around monitors?
>
>How about a compass?
>--scott
>"C'est un Nagra. C'est suisse, et tres, tres precis."

A compass will give direction but no magnitude.

Walker Scientific sells a line of gaussmeters,
Walker Scientific
Rockdale ST
Worchester, Mass 01606
508-852-3674, 800-962-4638

They have a brochure listing models from $240 on up.
I have a 66.
Je ne parle Francais,
Galen, KF0YJ

575. Re: Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-10 22:08:35 UTC
From: kreblon@doc.cc.utexas.edu
Message-ID: <2lo5p3$8pk@doc.cc.utexas.edu>
Source record: 118365
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <2lnq24$g8d@auggie.ccit.arizona.edu>,
Catherine S Williams <cwilliam@helium.gas.uug.arizona.edu> wrote:
>What equipment is available (relatively inexpensively) for testing
>for very low magnetic field radiation, such as around monitors?
>Are there are projects in any of the consumer electronic-do-it-
>yourself mags?
>
>I don't want to get into a debate about whether such testing is
>worthwhile (at least not now).
>
>Thanks,
>cwilliam@gas.uug.arizona.edu
>

Hello Catherine..Im Bob Nagy at UT Botany department..Here is how to
check low level mag fields. I manufactured an inepensive mag field
meter a few years ago..but could not sell them well...Ill tell you
how to make one. You take Radio shack's 30 dollar'ish analog audio DB meter
and remove the condenser mike element. You then take some 28 gauge wire,
50 feet of it..and make a small coil about 1.5 inches in diameter.
Take the two ends of that coil..strip and tim them..and solder them
to the two connections where the mic element was. Nothing else to do.
You can put the coil-sensor in a small plastic box and screw it to
the underside of the audio meter..That was my product..It seems that
calibration was un-nessasary and that a reading of -2 on the 60db
scale equated to the lower level that had been linked to damage in
the Denver studies. (anything above that) We have run many tests on
plant tissue here at a number of frequencies and show nothing
concrete. The word today is "prudent Avoidance" I still have a few of those
meters, and Id be glad to loan you one.

Toodles-
Bob

576. Re: Series Diodes (was Re: Paralleling ...)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 01:42:42 UTC
From: smattila@metz.une.edu.au
Message-ID: <3692@grivel.une.edu.au>
Source record: 118366

There one more good reason to put a capacitor parallel with a power rectifier diode. Carrier lifetime in typical diode happens to cause fair amount of RF noise in the 1 - 15 MHz band. The noise is very sharp mains frequency pulses. About 1 nF ceramic capacitor parallel with each diode with very short leads takes most of this noise out. The curious thing is, that capacitors before and after bridge rectifier are not effective.

Very few books (maybe Rohde's) deal with this phenonema, but I have read about it and made several experiments with various silicon rectifiers. Good old selenium rectifiers are free from this kind of noise.

Sakari Mattila smattila@metz.une.edu.au VK2XIN, OH2AZG (Cis: 71307,1525)
P.O.Box u13 tel. +61 67 733752 ----------
Armidale NSW 2351 ----------
----

577. WEFAX converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 01:45:46 UTC
From: smattila@metz.une.edu.au
Message-ID: <3693@grivel.une.edu.au>
Source record: 118367

This comment is in fact a reply to Ron's question, but my mail does not
reach him.

To: us240099@emi.3m.com.dnet

Subject: Re: S-Band converter design
Newsgroups: rec.radio.amateur.homebrew
In-Reply-To: <2klf26$olr@dawn.mmm.com>
Organization: University of New England, Armidale, Australia

Ron,

There are WEFAX converters available from UKW Berichte in Germany.
These are very good ones, but pretty expensive. My friend in Finland
has one and is satified with it. I have address and some more data
at home.

Also plans and PCB patterns for some WEFAX converters were published
in the Wireless World about 15 years ago. These are still usefull,
you only add a modern pre-amplifier.

Timestep Limited in U.K. also sells 1.7 GHz WEFAX converters.

The output of WEFAX systems is around 137 MHz, you must change some
crystals and retune output circuits.

Sakari Mattila smattila@metz.une.edu.au VK2XIN, OH2AZG (Cis: 71307,1525)
P.O.Box u13 tel. +61 67 733752 ----------
Armidale NSW 2351 ----------
----

578. Re: DownEast Microwave Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 02:38:38 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2lolje$jk5@nntp2.Stanford.EDU>
Source record: 118368

boley.d%wec@dialcom.tymnet.com () writes:

>Anybody have any comments on the DownEast microwave kits ??

I recently purchased one of their assembled 3W 1296 amplifiers.
The unit works great but the enclosure looks a little rough.
The heat sink was unfinished and looks like it was cut with a
hack saw and the box cover looked like it was cut with tin
snips and bent up with a hammer and a vice. If you don't mind
that kind of attention to detail, I guess they are OK.

Steve Muther WF6R

579. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 03:28:36 UTC
From: smattila@metz.une.edu.au
Message-ID: <3694@grivel.une.edu.au>
Source record: 118369

A small slice of history ... Old (pre-1980's) silicon power diodes were
not controlled avalanche type. They were destroyed by overvoltages. All
new rectifier diodes (except some Schottky diodes) act like zeners and
are destroyed only (in practice) by overheating. Thus capacitors are no
longer needed if the wiring is equal for each of the series connected diodes.
Some power rectifier manuals explaint this.

The RFI (or should I say EMC) problem still persists, capacitor is needed
even for one diode to suppress HF noise caused by the diode switching action.

Sakari Mattila smattila@metz.une.edu.au VK2XIN, OH2AZG (Cis: 71307,1525)
P.O.Box u13 tel. +61 67 733752 ------------------------------
Armidale NSW 2351 --------------------------
----

580. Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 04:13:01 UTC
From: penneys@brahms.udel.edu
Message-ID: <2lor4d$krj@brahms.udel.edu>
Source record: 118370
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

I need to replace a car and want one which 100 watts or so of HF and 50 watts or so of 2 meters or 440 will not interfere with the electronics af the vehicle. Nor do I want ignition or other noise beyond the bare minimum.

In consideration are four door sedans from the size of a Corolla up to that of a Taurus. or perhaps a minivan or small pickup. Replacing a Ford Aerostar.

Will listen to all viewpoints. Tnx a million. Bob
--
Bob Penneys, WN3K Frankford Radio Club Internet: penneys@pecan.cns.udel.edu
Work: Ham Radio Outlet (Delaware) (800) 644-4476; fax (302) 322-8808
Mail at home: 12 East Mill Station Drive Newark, DE 19711 USA

581. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 12:19:49 UTC
From: sww@csuohio.edu
Message-ID: <1994Mar11.121949.17460@news.csuohio.edu>
Source record: 118371
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

Winnebago Industries makes a bunch of very fine vehicles for mobile HF.
You don't even have to worry about missing your turn off!

73,
Steve NO8M.#NEOH.OH.USA.NA
ag807@Cleveland.freenet.edu

582. Re: DownEast Kits ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 13:08:02 UTC
From: zlau@arrl.org
Message-ID: <1994Mar11.130802.5061@arrl.org>
Source record: 118372

boley.d%wec@dialcom.tymnet.com wrote:
: Anybody have any comments on the DownEast microwave kits ??

The no-tune boards are really a compromise to let people
get on the microwave bands without expensive test equipment.

They are fine for routine work such as packet links
and casual operating. But, if you want the ultimate
station, no matter what the cost, you can do better.

For instance, the current drain is much higher than if you
were to use say, tuned GaAs FET multipliers. But for
portable use, you have to be careful what you use to tune
your circuits with. Cheap trimmers tend to be unreliable.
Below 1 GHz, I like to use high quality piston trimmer
capacitors.

Also, microstrip filters tend to be more lossy than filters
made by milling out blocks of brass. Thus, you need
more gain ahead of the mixer/filter to get the same
noise figure, which degrades dynamic range. Usually not
important, though Gary has pointed out the possibility
of a nearby Ku Band uplink hammmering your receiver.
Eliminating the MMICs on the RF input of a receiver
and using just GaAs FET stages usually results in a
better noise figure and dynamic range.

The mixers are actually pretty good, though there are
better ones. The DBM in my S band converter has
only 5 dB of loss (bought it at a Microwave Update auction).

If you are going to be driving a kW amp and need the cleanest
signal possible, I'd recommend you chop up a no-tune
transverter board and put the LO, receiver, and
transmitter into separate shielded enclosures, hooking
up the RF connections with SMA connectors.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

583. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 13:56:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar11.135613.16379@ke4zv.atl.ga.us>
Source record: 118373
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <2lor4d$krj@brahms.udel.edu> penneys@brahms.udel.edu (Robert Penneys) writes:
>I need to replace a car and want one which 100 watts or so of HF and 50 watts
>or so of 2 meters or 440 will not interfere with the electronics af the
>vehicle. Nor do I want ignition or other noise beyond the bare minimum.
>
>In consideration are four door sedans from the size of a Corolla up to that
>of a Taurus. or perhaps a minivan or small pickup. Replacing a Ford
>Aerostar.
>
>Will listen to all viewpoints. Tnx a million. Bob

Look at what the cops are driving. Ford Crown Victorias seem popular
with them, as do Chevy Caprices. Order your's with the same fleet codes
that they use and you'll have a car that works well with radios. (It'll
also have the heavy duty electrical system, cooling system, and suspension
of a cop car.) Get the same color scheme that they use for their unmarked
cars too, that way the antennas won't draw suspicion. (And you may avoid
some tickets.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

584. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 15:14:37 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CMIACE.D9C@hpqmoea.sqf.hp.com>
Source record: 118374
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

I'm happy with my choice, a Diesel powered Range-Rover derivative
called a "Discovery"

Give serious thought to Diesels, no ignition, no computers

David GM4ZNX

585. Re: Parts/tubes needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 15:40:58 UTC
From: mark.smith%ccmail@x400gw.msfc.nasa.gov
Message-ID: <mark.smith%ccmail.7.000FAF40@x400gw.msfc.nasa.gov>
Source record: 118382

In article <2lqnl1INN1v2@charnel.ecst.csuchico.edu> bmcnulty@oavax.csuchico.edu (bob)
writes:
>From: bmcnulty@oavax.csuchico.edu (bob)
>Subject: Parts/tubes needed
>Date: 11 Mar 1994 21:25:53 GMT

> I have recently inherited several old (1930's-40's) radios which
>need tubes. Tubes don't seem to be available locally so I am in need of a
>supplier either regionally (Northern California) or mail order.
>I would also like to restore the wood fininsh of the old Philco's I
>have but I would need to replace the decals.
>Does anyone know of a source for such items?

> I would be most greatful for the info e-mail as I don't get to the News
>to often.
Radio Shack can suprise you on the old tubes they can special order, I have
special ordered tubes from them in the 30-40's vintage.

mark.smith%ccmail@x400gw.msfc.nasa.gov

> TIA

> Bob
> BMCNULTY@OAVAX.CSUCHICO.EDU

586. Re: Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 17:45:01 UTC
From: kludge@grissom.larc.nasa.gov
Message-ID: <2lqamt$fhi@reznor.larc.nasa.gov>
Source record: 118375
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <1994Mar10.220431.120595@yuma> galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:
>In article <2lnugo$hv4@reznor.larc.nasa.gov> kludge@grissom.larc.nasa.gov (Scott Dorsey) writes:
>>In article <2lnq24$g8d@auggie.CCIT.Arizona.EDU> cwilliam@helium.gas.uug.arizona.edu (Catherine S Williams) writes:
>>>What equipment is available (relatively inexpensively) for testing
>>>for very low magnetic field radiation, such as around monitors?
>>
>>How about a compass?
>
>A compass will give direction but no magnitude.

It gives you a very crude indication of magnitude in that you can compare the deflection with that of the earth's magnetic field, or with a reference magnet. Not terribly accurate, I agree, but fine for some work.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

587. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 17:54:26 UTC
From: dts@world.std.com
Message-ID: <CMIHqr.IAK@world.std.com>
Source record: 118376
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <CMIACE.D9C@hpqmoea.sqf.hp.com> dstock@hpqmoca.sqf.hp.com (David Stockton) writes:
>
> I'm happy with my choice, a Diesel powered Range-Rover derivative
>called a "Discovery"
>
> Give serious thought to Diesels, no ignition, no computers
>

And no emissions controls. :-(Diesel smoke is a suspension of carbon particles impregnated with the byproducts of combustion, which is small enough to enter your lungs and lodge in the lung walls. Once lodged all those combustion byproducts leach out into your body. Diesel vehicles need dust traps at the very least.

>
> David GM4ZNX
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>

--

Daniel Senie Internet: dts@world.std.com
Daniel Senie Consulting n1jeb@world.std.com
508-365-5352 Compuserve: 74176,1347

588. Re: Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 20:22:01 UTC
From: alanb@sr.hp.com
Message-ID: <CMIoKq.BxA@srgenprp.sr.hp.com>
Source record: 118377
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Catherine S Williams (cwilliam@helium.gas.uug.arizona.edu) wrote:

: What equipment is available (relatively inexpensively) for testing
: for very low magnetic field radiation, such as around monitors?
: Are there are projects in any of the consumer electronic-do-it-
: yourself mags?

There was a letter to the editor in Oct 15, 1990 "Electronic Engineering Times" magazine that had some hints on do-it-yourself magnetic field meters. Basically, you make a big pickup coil and hook it to an oscilloscope or RMS voltmeter. The pickup coil responds more strongly to high frequencies than low, with a 6 dB/octave response curve. So, to get accurate results, you follow the loop with a 6 dB/octave low-pass filter (series resistor, shunt capacitor). You can wind the pickup loop yourself (e.g. 1350 turns 5 cm diameter delivers 1 mv in a 10-milligauss 60 Hz field -- the author used a 47K / 0.1 uF de-emphasis network which results in .4 mV for 10 milligauss.) Or you can simply use a dismembered C-frame 115V motor, disassembled power transformer, or bulk tape eraser.

To calibrate the pickup, make a one-turn loop of wire 11 inches in diameter and feed .223 amps AC through it. That results in a 10 milligauss field at the center of the loop. A more uniform field can be generated with a Helmholtz coil, with a bit more work.

: I don't want to get into a debate about whether such testing is
: worthwhile (at least not now).

OK, but just to put the whole EM field scare in perspective, the fields from CRT's typically measure in the few (single-digit) milligauss range, which is comparable to the stray 60 Hz fields you would find in the average home. The field directly under a high-tension power line is typically a few 10's of milligauss, which is comparable to the field close to your average electric stove burner. The earth's magnetic field is about 500 milligauss.

AL N1AL

589. Re: CATV freq. shifting device needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 20:22:42 UTC
From: monta@pixel.mit.edu
Message-ID: <MONTA.94Mar11152242@pixel.mit.edu>
Source record: 118378
Cross-posted to: rec.radio.amateur.homebrew,alt.dcom.catv

cdls@netcom.netcom.com (Chris Swanson) writes:

> [CATV frequency translation]
> ...
> Pointers to plans would be great!

I just saw a neat little book that contains a project very much like this. The title is something like _Amazing Audio and Video Projects_, by Carr and someone else. A TAB book, I think, so give them a call for the specifics. Fairly high-level projects with interesting background.

The CATV project is a home-distribution system, a kind of miniature home-CATV system. Modulate up various baseband video sources, stick them on your cable for use. Would be easy to modify for generic RF->RF translation.

Peter Monta monta@image.mit.edu
MIT Advanced Television Research Program

590. Re: Reducing Tube Filament Voltage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 20:28:39 UTC
From: alanb@sr.hp.com
Message-ID: <CMIovs.C6A@srgenprp.sr.hp.com>
Source record: 118379

Scott Dorsey (kludge@grissom.larc.nasa.gov) wrote:
: In article <1994Mar8.135014.15825@ccd.harris.com> drs@ccd.harris.com (Doug Snowden) writes:

: > In an article by AG6K on QSK for the TL-922 and SB-220 he mentions that
: >a good method of reducing the filament voltage (at the socket) is by
: >using smaller guage wire from the transformer to the socket. He mentions that
: >it should have good (teflon) insulation. ...

: That actually sounds like a bad idea to me. Why not just use a lower voltage
: transformer? ...

: Inrush current limiting will only extend tube life in that it will reduce
: the chances of filament failures. Whether this is important or not depends
: on the particular tube type. Easy ways of handling turn-on filament failures
: are to use a slightly undersized transformer that is impedance-protected, or
: to use thermistors.

That's the advantage of using a resistor (or high-resistance wire) on the filament secondary: it reduces inrush current at turn-on. However, you can accomplish the same thing by adding a resistor in series with the primary -- it's usually easier because the resistor value is not so unreasonably small.

AL N1AL

591. Re: DownEast Microwave Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 20:41:35 UTC
From: phil@hansen.ncd.com
Message-ID: <2lql1v$j76$1@rosebud.ncd.com>
Source record: 118380

I have never built any of their kits, but I do own 2 of the 30 Watt AMPs and 2 of the pre-amps.

They all have been in service for over 3 years (on two repeaters), working great!

Phil
de kj6nn

592. Parts/tubes needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-11 21:25:53 UTC
From: bmcnulty@oavax.csuchico.edu
Message-ID: <2lqnl1INN1v2@charnel.ecst.csuchico.edu>
Source record: 118381

I have recently inherited several old (1930's-40's) radios which
need tubes. Tubes don't seem to be available locally so I am in need of a
supplier either regionally (Northern California) or mail order.
I would also like to restore the wood fininsh of the old Philco's I
have but I would need to replace the decals.
Does anyone know of a source for such items?

I would be most greatful for the info e-mail as I don't get to the News
to often.

TIA

Bob
BMCNULTY@OAVAX.CSUCHICO.EDU

593. Re: Testing for very low magnetic fields?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-12 01:05:38 UTC
From: kfa@hugo.hut.fi
Message-ID: <KFA.94Mar12010538@hugo.hut.fi>
Source record: 118384
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

To measure the AC magnetic field of a monitor make a large diameter wire loop. The voltage induced in the loop conductor is propotional to (number of turns) X (loop area) x (dB/dt). Output voltage is directly propotional to the AC magnetic field frequency.

TV and monitor screens have magnetic deflectors. They produce a high-freuquency field (around 15 - 30 kHz) which is easy to measure with a suitable AC voltmeter and the loop antenna. The frequency dependendence of the loop efficiency will cause the TV deflection fields to seem to have a magnitude of 300 times higher than a 60 Hz magnetic field with the same field amplitude.

A simple RC low-pass filter (integrator) will have an attenuation coefficient of 1/f and can be used to make the field sniffer frequency independent. Follow that with an opamp gain block and an opamp rectifier circuit and you have a simple "Directional Enviromental Magnetic Field Detector".

--
Kim Fallstrom
HUT Lab. of Physics
Finland

594. For sale: 1300 nm (IR) laser diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-12 07:13:34 UTC
From: wnimhack@vax2.winona.msus.edu
Message-ID: <1994Mar12.021334.1@vax2.winona.msus.edu>
Source record: 118383
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Mitsubishi laser diode module FU-16SLD-N3. Infrared 1300 nm, peak power
4 mW, class IIIb. Mfrd 1991. New in original sealed anti-stat boxes.
Specs for a typical one pulled from the bin at random:

I(th) 13.5 mA
I(op) 26.8 mA
PL 0.22 mW
lambdaP 1293 nm
I(m) 0.409 mA

Diode is press-fitted into a handsomely machined stainless case which looks
somewhat like a 0.25" diameter chassis mount BNC, but with threads instead
of pins. (Probably a precision fiber socket of some type.)

Looking to get $8 each for these units (15 of them available).

/s Bruce R. Mitchell
wnimhack@vax2.winona.msus.edu

595. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-12 15:36:12 UTC
From: adam@wam.umd.edu
Message-ID: <2lsnhc$1nh@cville-srv.wam.umd.edu>
Source record: 118385
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <1994Mar11.135613.16379@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>Look at what the cops are driving.

Good idea, Gary. Just don't forget to leave off the whitewalls!

-N3NKI

596. Classified Ads (was Re: For sale: 1300 nm (IR) laser diodes)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-12 20:17:59 UTC
From: Kenneth.E.Harker@Dartmouth.Edu
Message-ID: <2lt81n$8e@dartvax.dartmouth.edu>
Source record: 118386
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Since I seem to be seeing a rash of classified ads in this
newsgroup lately, I think it's time to point out that for sale/wanted
posts belong in rec.radio.swap and rec.radio.swap _only_. Please
refrain from posting classified ads here.

==
Kenneth E. Harker N1PVB Dartmouth College Amateur Packet Radio
kenneth.e.harker@dartmouth.edu Hinman Box 1262 n1pvb@w1et.nh.usa.na
(603) 643-6549 Hanover, NH 03755 or n1pvb-5 on 144.99
==
(PGP Public Key now available on request)

597. Duplexer design info?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-12 23:23:53 UTC
From: n7oo@huachuca-emh8.army.mil
Message-ID: <199403122332.PAA14622@ucsd.edu>
Source record: 118387

In browsing various publications, appears modern VHF/UHF duplexer design is a product of the black art. I'm in the process of cutting down an old DB Products band-pass 2M duplexer for 220 MHz. This duplexer has coupling loops in each cavity. My references don't discuss whether there is an optimum coupling loop shape factor Vs frequency. Nor is anything mentioned whether the lengths of the cavity coaxial connecting lengths are critical. One commercial reference cautions field technicians from modifying the coaxial harness, stating to do so will cause deteriation of duplexer performance.

Whilst the cavities are apart, it would be nice to modify them for band-reject operation as well. Again, my references are silent on this topic.

Anyone on the net willing to share their practical experience/guidance about duplexer design?

73 de Jack

598. Re: Ramsey SA-7 broadband preamp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 00:38:15 UTC
From: at017@cleveland.Freenet.Edu
Message-ID: <2ltn9n$45m@usenet.INS.CWRU.Edu>
Source record: 118388

In a previous article, eb795@cleveland.Freenet.Edu (Eric Matthews) says:

>
>Hello.
>
>I would like to know if any of you here on r.r.a.h have assembled
> and used the Ramsey SA-7 preamp.
>I am planning to get a few of them and use them for TV and FM DX.
>I will have one for FM, one for UHF, and one for VHF.
>I have three seperate antennas for those bands, and seperate feed
>lines too.
>
>Will it be difficult to design a filter system where only the de
>esired band(ie FM, or UHF TV) get amped by the SA-7?
>
>I plan on buying three of them, and I would like to know what I
>am getting into before I plunk down the $$$.
>
>By the way, here are some specs:
>
>freq range:100kHz to 1000mHz
>gain:>20dB
>noise figure: < 4dB
>NEC microwave transistors are used in the design.
>They are $14.95 each in kit form from Ramsey.
>Ramsey is at: (716)924-4560
>
>
>
>Thanks.
>--
>Eric Matthews
>eb795@cleveland.freenet.edu
>

I used one for my 6 meter rig and it works. According the the instructions
you can tune it for a desired frequency by adding a tuned circuit before
and after the preamp....
--
Ronald Wolenski at017@cleveland.freenet.edu
N8WCR
Parma, Ohio

599. Two Unknown Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 05:47:43 UTC
From: mjsilva@ted.win.net
Message-ID: <172@ted.win.net>
Source record: 118389

Hi,

I'd like to get a little info on two chips I've run across. One is an NEC B571C, 8 pin DIP (so I know it's not the Signetics compandor). I think it's a prescaler for a PLL. The other is a (Plessey?) PSSR SL560C, 8 pin DIP, which may be an IF amp. I'm hoping to get enough of a description of these to decide if they might be fun to play with. Thanks for any info.

73,
Mike, KK6GM

600. Two Unknown Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 05:48:10 UTC
From: mjsilva@ted.win.NET
Message-ID: <173@ted.win.net>
Source record: 118390

Hi,

I'd like to get a little info on two chips I've run across. One is an NEC B571C, 8 pin DIP (so I know it's not the Signetics compandor). I think it's a prescaler for a PLL. The other is a (Plessey?) PSSR SL560C, 8 pin DIP, which may be an IF amp. I'm hoping to get enough of a description of these to decide if they might be fun to play with. Thanks for any info.

73,
Mike, KK6GM

601. Re: Looking for plans/kits..VHF CW/SSB QRP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 14:55:42 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar13.145542.27352@ke4zv.atl.ga.us>
Source record: 118391

In article <2ltfqa$31f@winfree.gag.com> bdale@gag.com (Bdale Garbee) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: Look at the two part feature in recent QSTs describing Rick Campbell's
>: SSB rig. It will work on any frequency up to 70 cm.
>
>I sent an SASE asking for more info to the supplied address a couple of
>months ago, but have heard nothing back... was I unlucky? Time to try again,
>I suppose.

I'm afraid that appears rather typical of Rick. He does good designs, but
he services reader response only when he feels like it, which appears to
not be often. I had similar problems getting him to fullfill on the 902
MHz transverter kit. I eventually got it, but response time was slightly
over one year. (!) I advise getting the board templates from the ARRL
and proceeding on your own. (His designs really do tend to be foolproof,
it's worth the effort. The slow response I suffered may not be typical,
others I know have gotten much quicker service. I've built two different
transverters of his design. Both worked first time without any fooling
around. I've no doubt the transceivers will work as well. I'm intending
to hunt him down at Dayton and deal face to face for a couple of them.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

602. TX amp kit? Help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 15:09:43 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar13.230943.1@ntuvax.ntu.ac.sg>
Source record: 118392
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

I need a reccomendation for a TX amp of about 20-30 watts output on
20 meters from about 4 watts input, kitform, small sized so I can put it in
the same case as my QRP xcvr and with built in T-R switching. Price must not
be too expensive. Any ideas?

73,
Daniel

603. Re: Duplexer design info?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 15:09:59 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar13.150959.27477@ke4zv.atl.ga.us>
Source record: 118393

In article <199403122332.PAA14622@ucsd.edu> n7oo@huachuca-emh8.army.mil (Jack Taylor) writes:
>In browsing various publications, appears modern VHF/UHF duplexer design is
>a product of the black art. I'm in the process of cutting down an old
>DB Products band-pass 2M duplexer for 220 MHz. This duplexer has coupling
>loops in each cavity. My references don't discuss whether there is an
>optimum coupling loop shape factor Vs frequency. Nor is anything
>mentioned whether the lengths of the cavity coaxial connecting lengths are
>critical. One commercial reference cautions field technicians from modifying
>the coaxial harness, stating to do so will cause deteriation of duplexer
>performance.
>
>Whilst the cavities are apart, it would be nice to modify them for band-
>reject operation as well. Again, my references are silent on this topic.

The harness is an integral part of the duplexer. For a band reject duplexer, the electrical lengths of the cables are integral parts of the tuned system. Altering them will grossly alter the behavior of the system. The cables are *slightly* less critical in a bandpass duplexer, but impedance matching is even more critical, and shielding is crucial.

A bandpass cavity has two ports, input and output, a band reject cavity has a single port. It behaves as a tuned stub with the harness forming a part of the stub. The idea is to have a pole zero at the thruline connection. Coupling loops really are a black art. Their shape, size, and position all interact to give the desired degree of insertion loss, impedance match, and passband shape. There are analytical methods of designing them, but most shops seem to rely more on cut and try methods.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

604. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 16:42:44 UTC
From: jmaynard@nyx10.cs.du.edu
Message-ID: <1994Mar13.164244.26464@mnemosyne.cs.du.edu>
Source record: 118394
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <1994Mar11.135613.16379@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>Look at what the cops are driving. Ford Crown Victorias seem popular
>with them, as do Chevy Caprices.

There's a brand new '94 Crown Vic with police package sitting in my driveway
as I type this, courtesy of the EMS I run with. All I can say is...WOW!!!
(Unfortunately, I have to pass it along at the end of my shift...)

> Order your's with the same fleet codes
>that they use and you'll have a car that works well with radios.

I thought mere mortals couldn't buy cars with those fleet codes.
--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"The difference between baseball and politics is that, in baseball, if you
get caught stealing, you're out!" -- Ed Shanks

605. Ramsey Hobbykits QAMP.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 17:12:01 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar14.011201.1@ntuvax.ntu.ac.sg>
Source record: 118395
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,
Has anyone here built the Ramsey Hobbykits' QAMP Tx amplifier with
the T-R reply? Any comments? What is the size of this thing and how well does
it perform? Tks.

73,
Daniel

606. home-built crystal filter - it works!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 19:09:15 UTC
From: jjw@seastar.org
Message-ID: <CMMAJG.Cp@seastar.org>
Source record: 118396

Another progress report on crystal filter designing: As I did
not have the correct caps for an 8-pole SSB filter, I used some of the
extra crystals I'd matched to make a 2200Hz 5-pole Chebychev 0.1db
ripple filter. Results were quite good!
The design spec was for 2200Hz bw, and the result was 2240Hz
wide. It drops like a rock on both sides. Is 200 ohms in and out, so
I matched it with a 4:1 transformer on the input and a 200 ohm
resistor on the end.
I have not yet measured insertion loss, and the ripple looks a
little bit higher than 0.1db (like maybe 0.5db) using stock value
capacitors. I did no tuning at all, just used the closest stock value
caps I had, and it works well.
The program I wrote calculates not only the shunt caps, but
the series caps needed to re-resonate the crystals. These caps are
the important ones if you want the shape to be correct. Calculating
these by hand is a bit of a bear, but with a computer and BASIC it's
pretty easy.
Now to prettify the program and the output, get some more caps
and sling more solder...
73 de N9JZW

--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org

607. Power info for Gonset Communicator II

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 20:21:17 UTC
From: kb2ear@kb2ear.ampr.org
Message-ID: <2lvsjt$ltv@kb2ear.ampr.org>
Source record: 118397
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I need info on the power connection for a Gonset Communicator II (Gooney Box). Please send info in all the different configs. As of now I have no way to power it at all.

73,
--
Scott R. Weis KB2EAR
Internet: kb2ear@kb2ear.ampr.org
Snail Mail: 10 Palmer Rd., Kendall Park, NJ, 08824-1228
Phone: +1 908 297 0469

608. Re: Two Unknown Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-13 20:34:31 UTC
From: hawthorn@msc.cornell.edu
Message-ID: <2lvtcn$hrd@panther.msc.cornell.edu>
Source record: 118398

In article <172@ted.win.net>, mjsilva@ted.win.net (Michael Silva) writes:
>Hi,
>
>I'd like to get a little info on two chips I've run across. One is an
>NEC B571C, 8 pin DIP (so I know it's not the Signetics compandor). I
>think it's a prescaler for a PLL. The other is a (Plessey?) PSSR
>SL560C, 8 pin DIP, which may be an IF amp. I'm hoping to get enough
>of a description of these to decide if they might be fun to play with.
>Thanks for any info.
>
>73,
>Mike, KK6GM
>
>

The SL560C is a Plessey 300 MHz low noise amp.
- 14 dB gain with 300 MHz bandwidth
- 2 dB noise figure with 200 Ohm source (3.5 dB with 50 Ohm)
- 7 to 11 dBm compression point (1 dB), depending on supply
compression point drops above 30 MHz (6 dBm @ 300 MHz, 9 volts)

I have the data sheets for FAX or snail mail. Send me e-mail if you would
like a copy. There is also an 9 page ap. note which I do not have.

dean
N2QMA

609. Best truck/sport util for HF/VHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 01:10:38 UTC
From: penneys@brahms.udel.edu
Message-ID: <2m0die$7t5@brahms.udel.edu>
Source record: 118399
Cross-posted to:
rec.radio.amateur.misc,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

Thanks for your input on cars etc. so far.

I have narrowed my thinking to a small pickup or sport utility such as
Bronco, Trooper, etc., probably 86 to 91.

I am told that American cars have less solid state devices to go awry
due to RF from HF or VHF rigs, that Ford seems to be a good choice, that
Japanese vehicles may be more susceptible to RF.

Again, besides physical comfort (my back) criteria include lack of problems
from car to rig and vice versa, and other normal concerns.

All input welcomed. Thanks again. Bob

--
Bob Penneys, WN3K Frankford Radio Club Internet: penneys@pecan.cns.udel.edu
Work: Ham Radio Outlet (Delaware) (800) 644-4476; fax (302) 322-8808
Mail at home: 12 East Mill Station Drive Newark, DE 19711 USA

610. Info on James Knights Xtal/oven

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 04:49:21 UTC
From: bsn@calvin.ph.utexas.edu
Message-ID: <2m0qch$juu@geraldo.cc.utexas.edu>
Source record: 118400

I am looking for information on a crystal/oven manufactured by James Knights Company. It is a 1 MHz rock mounted in an oven which operates at 55 C. The model number is JK5T.The heater runs on 6.3 volts and the volts and the unit plugs into a 5 pin socket. In the best of all worlds, I'd like to know the pin-out, the xtal cut and whether the xtal was designed for series or parallel operation.

In any case, does anyone know if the James Knights Co. is still in business? They were located in Sandwich IL when the crystal I have was manufactured.

Tne es 73,
Barry W5KH

611. Looking For Plans/kits..vhf Cw/ssb Qrp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 06:43:00 UTC
From: Timothy.Cadigan@f239.n109.z1.fidonet.org
Message-ID: <0a1_9403140322@blkcat.fidonet.org>
Source record: 118401

Harry, let me know if you get any bites on your message,
I would love to see some qrp stuff for 6 meters!
Thanks and good hunting. Also I have found a source for the
Motorola FM transmitter chip - nice little thing.
thanks again, 73 Tim Cadigan, wc1f
Cadigan@Guvax.edu

612. HP components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 07:26:59 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2m13k3$248@olivea.ATC.Olivetti.Com>
Source record: 118402
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

>Is there anybody that knows which ,if any,74xxxx or other equivalent are
>hp components 1820-0092, 1820-0090, 1820-0093, 1820-0119 or
>have a list in general for hp to commercial equivalent
>sorry if this is a ricorrent question .
>Thanks to anybody that will help me.

>Please email me directly.

Thank to everybody that gave me help in solving this problem.
if somebody have the same problem please let me know I will
send to him the answer.
Again thanks to all.

Sincerly

Roberto VALFREDINI

613. Re: Two Unknown Chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 09:00:17 UTC
From: tgm@netcom.com
Message-ID: <tgmCMnD0I.Fr2@netcom.com>
Source record: 118403

Michael Silva (mjsilva@ted.win.NET) wrote:
: I'd like to get a little info on two chips I've run across. One is an
: NEC B571C, 8 pin DIP (so I know it's not the Signetics compandor). I
: think it's a prescaler for a PLL. The other is a (Plessey?) PSSR
: SL560C, 8 pin DIP, which may be an IF amp. I'm hoping to get enough
: of a description of these to decide if they might be fun to play with.
: Thanks for any info.

I can help a little on the NEC device. The UPB571C is a dual modulus
pre-scaler rated up to 500 MHz. It offers the following ratios:

divide by 16, divide by 17
divide by 32, divide by 33
divide by 64, divide by 65

Input sensitivity is 400 mV,p-p and output amplitude is 1.2 V,p-p.
Supply voltage is 4.5 to 5.5 volts at 11 mA.

I don't have info on the pin-out.

I think it is manufactured by a division of NEC known as California
Eastern Laboratories. Here are some phone numbers:

(408) 988-3500
(408) 988-7846
(213) 645-0985

73,

Thomas KI4N

614. Cubic incher

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 09:29:07 UTC
From: kenneth@stud.unit.no
Message-ID: <2m1ap3$arn@ugle.unit.no>
Source record: 118404

Refering to the cubic incher in the ARRL handbook, chapter 30.

In the handbook the data for the inductors are only listed for 80, 40 and 30 m.
I plan to build this for 20 meter, does anyone out there know the specifications
for the inductors ??

thanks,

kenneth, LA7GIA.

615. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 13:35:47 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar14.133547.1702@ke4zv.atl.ga.us>
Source record: 118405
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <1994Mar13.164244.26464@mnemosyne.cs.du.edu> jmaynard@nyx10.cs.du.edu (Jay Maynard) writes:
>In article <1994Mar11.135613.16379@ke4zv.atl.ga.us>,
>Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>>Look at what the cops are driving. Ford Crown Victorias seem popular
>>with them, as do Chevy Caprices.
>
>There's a brand new '94 Crown Vic with police package sitting in my driveway
>as I type this, courtesy of the EMS I run with. All I can say is...WOW!!!
>(Unfortunately, I have to pass it along at the end of my shift...)

Nice car, even if it is a Ford. :-)

>> Order your's with the same fleet codes
>>that they use and you'll have a car that works well with radios.
>
>I thought mere mortals couldn't buy cars with those fleet codes.

The dealers don't care, wave money in their faces and they'll order
anything in their book.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

616. Re: PC or old Mac conversion to oscilloscopes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 17:15:18 UTC
From: c2xjcb@kocrsv01.delcoelect.com
Message-ID: <1994Mar14.171518.7045@kocrsv01.delcoelect.com>
Source record: 118406

In article <2lnr2v$4ra@growler.ccr-p.ida.org>, rees@ccr-p.ida.org (Howard Rees) writes:
> Can someone tell me where or how I can find inexpensive software which will allow

> this would be a worthwhile project. If the mac can not be used this way what
> about my much newer PC?

There has been an ad in the back of QST for the past several months for
a software package that lets you do data collection and signal analysis
using your PC's standard "Sound Card" (i.e. SoundBlaster, etc.).

Maybe this will do ya . . .
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Powertrain Strategy Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

617. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 17:25:52 UTC
From: c2xjcb@kocrsv01.delcoelect.com
Message-ID: <1994Mar14.172552.7310@kocrsv01.delcoelect.com>
Source record: 118407
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <1994Mar11.135613.16379@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) writes:
> In article <2lor4d$krj@brahms.udel.edu> penneys@brahms.udel.edu (Robert Penneys) writes:
> >I need to replace a car and want one which 100 watts or so of HF and 50 watts
> >or so of 2 meters or 440 will not interfere with the electronics af the
> >vehicle. Nor do I want ignition or other noise beyond the bare minimum.
> >
> >In consideration are four door sedans from the size of a Corolla up to that
> >of a Taurus. or perhaps a minivan or small pickup. Replacing a Ford
> >Aerostar.

My '94 Chevy Lumina Euro seems OK for HF; I'd planted my Kenwood
TS-140 on the passenger seat the other day, and had NO problems.
75W out on 20M thru the cigarette lighter; OK, large capacitor and
ferrite torroid on power lines, left over from my '88 Grand Am whose
"Driver Information Center" didn't like the 20M band :-). Couldn't
even find the "birdies" from the Engine Control Module's uP!

The only discernable "noise" is a small bit of hash from the fuel pump,
and a lot of hash when raising/lowering the power windows. I suspect
a simple LCL Pi filter on the fuel pump harness (near the fuel pump)
would take out the noise, but so does the noise blanker on the radio.

BTW:
Not to make this a big sale pitch for GM, but we do a LOT of RFI
testing on our cars to make sure that they neither corrupt nor get
corrupted by ham rigs. Stop by the GM booth at the Dayton HamVention
and we can talk some more . . .
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Powertrain Strategy Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

618. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 17:32:59 UTC
From: c2xjcb@kocrsv01.delcoelect.com
Message-ID: <1994Mar14.173259.7916@kocrsv01.delcoelect.com>
Source record: 118408
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <CMIHqr.IAK@world.std.com>, dts@world.std.com (Daniel T Senie) writes:
> >
> > Give serious thought to Diesels, no ignition, no computers
> >
>
^^^^^^^^^^
! WRONG !

We've been building diesel engine controllers for many many years.

In fact, we've got an engine controller for LP-fueled fork-lifts!

And we've got a controller for marine applications; one of them even
got submerged (with the boat) in salt-water for 10 weeks, and after
they dredged-out the boat (and cleaned-up the engine) the engine
started on the 1st-crank with THAT controller. But I digress.

There are several diesel models with computers controlling the
electronically controlled transmissions!

And what about the instrument cluster, CD player/Radio, etc.?
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Powertrain Strategy Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

619. adaptive denoising filters for voice

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 18:24:23 UTC
From: steve@hi.com
Message-ID: <steve-140394123659@brainiac.hi.com>
Source record: 118409
Cross-posted to: comp.dsp,rec.radio.amateur.homebrew

I'm interested in understanding the design of adaptive denoising filters for voice communications. There are several manufacturers selling DSP denoising filters to the amateur radio marketplace, and apparently some commercial units for aviation communications. Some well-known manufacturers are JPS Communications, Inc, Timewave Technology Inc, and W9GR.

Dr. Steven E. Reyer, WA9VNJ, and David L. Hershberger, W9GR published a brief tutorial in the September 1992 issue of "QEX", published by the ARRL. Their adaptive denoising filter uses Widrow's LMS algorithm to adapt an FIR filter, using a delayed version of the input signal as the reference signal. They claim that by proper choice of the delay and adaptation time constants, the FIR filter will adapt to a bandpass response around the portions of the spectrum which have a high "short-term" correlation (corresponding to the speech signal), and thus reduce the uncorrelated noise.

Reyer and Hershberger only reference Widrow et al's 1975 paper "Adaptive Noise Cancelling: Principles and Applications" in the Proc. IEEE Vol 63, No.2. I haven't tracked down this reference yet. (Wish I lived closer to a good university library.)

My questions:
1) Do the other denoising products use an algorithm similar to that described by Reyer and Hershberger? If not, what algorithms do they use?

2) Are there any good tutorial papers on this subject? Any important references other than Widrow et al?

3) It occurs to me that an LPC vocoder, such as used in a CELP vocoder, would serve as an effective denoising filter, since it supposedly models the vocal tract resonances. The excitation for the reconstruction filter would be the input (noisy) signal. Is it feasible to extract the LPC parameters from a noisy signal? Is anyone using this approach?

Thanks in advance for your time.

Regards,
-Steve

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

620. Re: Reducing Tube Filament Voltage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 20:13:55 UTC
From: alanb@sr.hp.com
Message-ID: <CMo878.5C1@srgenprp.sr.hp.com>
Source record: 118410

Scott Dorsey (kludge@grissom.larc.nasa.gov) wrote:
: In article <CMIovs.C6A@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
: >
: >That's the advantage of using a resistor (or high-resistance wire) on the
: >filament secondary: it reduces inrush current at turn-on. However, you
: >can accomplish the same thing by adding a resistor in series with the
: >primary -- it's usually easier because the resistor value is not so
: >unreasonably small.

: This is true, but it strikes me as a rather inefficient method of going
: about it. Thermistors are cheap.

True, but transformers are not cheap. If you can use a surplus 6.3V transformer with a 6.0 or 5.0V filament, you might be able to save some bucks. And the dropping resistor gives you inrush current limiting for free.

Incidentally, many commercial amplifiers intentionally use a transformer that is almost under-rated, spec'd so that it puts out the required voltage only when under full load. The internal transformer resistance provides the inrush limiting function.

AL N1AL

621. Re: Series Diodes (was Re: Paralleling ...)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 20:17:57 UTC
From: alanb@sr.hp.com
Message-ID: <CMo8Dx.5Hq@srgenprp.sr.hp.com>
Source record: 118411

Sakari Mattila (smattila@metz.une.edu.au) wrote:
: There one more good reason to put a capacitor parallel with a power
: rectifier diode. Carrier lifetime in typical diode happens to cause
: fair amount of RF noise in the 1 - 15 MHz band. The noise is very sharp
: mains frequency pulses. About 1 nF ceramic capacitor parallel with each
: diode with very short leads takes most of this noise out. The curious thing
: is, that capacitors before and after bridge rectifier are not effective.

Good point. The other solution is, paradoxically, to use faster diodes.
Faster diodes have much shorter carrier lifetimes which prevent
avalanching of the faster diodes in the string caused by depletion of
the carriers of the slower diodes.

AL N1AL

622. Re: Duplexer design info?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 20:27:14 UTC
From: alanb@sr.hp.com
Message-ID: <CMo8tG.5r9@srgenprp.sr.hp.com>
Source record: 118412

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Coupling loops really are a black art. Their shape, size, and position
: all interact to give the desired degree of insertion loss, impedance match,
: and passband shape. There are analytical methods of designing them, but
: most shops seem to rely more on cut and try methods.

The qualitative rule is: the bigger the loop the greater the coupling.
For bandpass cavities, more coupling results in less insertion loss,
but greater bandwidth. Less coupling gives a narrower bandwidth, but
more loss.

For band-reject cavities, more coupling gives a deeper, but wider notch.
Coupling also affects the tuning of the passband. If you want to convert
a 2-meter notch-type cavity to 220 MHz, I would recommend changing the
cavities to get the notches in the right place, then shrinking the
coupling loops to get the desired notch depth, and then playing with the
cable harnesses to get the passband right. There will be some interaction
between the three changes, but it should be doable. Be aware that some
of the better cavities have temperature compensation built in. Your
changes will likely defeat that feature.

AL N1AL

623. Re: Alliance 5-wire Rotor Motor Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 21:11:57 UTC
From: kerry@Ingres.COM
Message-ID: <1994Mar14.211157.27611@pony.Ingres.COM>
Source record: 118413
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <CSLE87-100394170722@145.39.1.10> CSLE87 (Karl Beckman) writes:
>In article <1994Mar10.145901.65354@yuma>, galen@picea.CFNR.ColoState.EDU
>(Galen Watts) wrote:
>
>> I've accquired an Alliance rotor motor with no control box. The rotor
>> takes 5 wires, has the rotating mast thru the body and the mast top clamp
>> on the side of the case. I've been told this style is often used as an
>> altitude rotor on Satellite setups.
>> Questions:
>> 1. What voltage does it take to turn the motor? AC or DC?
>
>24 VAC, about 40 watt xfmr (to be safe for more than 2% duty cycle). You
>drive one motor lead directly against ground and the other through a
>capacitor of about 10 mfd at 200 VAC.
>

Anyone have experience running a rotator with a power inverter?

The specific question is will one of the smaller rotors work with the
$100/200W units? Primary interest is use a backup power supply (marine
battery) for emergency services. I know that some of the cheaper
inverters only put out square waves. Does this cause a problem?

Thanks in advance.

forward, or email
kerry@ingres.com

624. Re: PC or old Mac conversion to oscilloscopes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 21:56:25 UTC
From: babb@ucsvax.sdsu.edu
Message-ID: <babb-140394135047@larc.sdsu.edu>
Source record: 118414

In article <2lnr2v$4ra@growler.ccr-p.ida.org>, rees@ccr-p.ida.org (Howard Rees) wrote:
>
> Can someone tell me where or how I can find inexpensive software which will allow
> me to use my old Macintosh 128k (upgraded years ago to 512k) as a simple,
> functional oscilloscope. I would like to do some simple experiments with my
> children, probing electrical circuits or exploring speech signals. Surely there
> is some way to easily use the microphone jack as a source of input. I need to
> sample the signal being probed, write to a file, then use that file to create a
> graphical display of the signal. Maybe one can do it in real time also. Any help

The 1/8 inch mini jack on the 512, Plus, & SE is a speaker jack. When Macs started shipping with System 7 you got a mike input jack (cause you can record your own system sounds!)

A MacRecorder and associated software will do what you wanna do. Up to a 22Khz sampling rate, 8 bits quantization on each of those samples. Does waterfall displays, FFTs in real-time, as well as the old standby waveform display.

Has a line in jack and a mic jack. I got mine hooked up to a siesmometer (no it wasn't on at 4:20 AM, when the earthquake let loose).

---------- Jeff Babb Programmer, LARC ----------
World War 3 can be averted by a strictly enforced dress code - Zippy
babb@ucsvax.sdsu.edu babb@uccsun1.sdsu.edu Flames to /dev/null
---

625. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-14 23:35:58 UTC
From: glyle@marie.seas.ucla.edu
Message-ID: <1994Mar14.233558.12700@enterprise.rdd.lmsc.lockheed.com>
Source record: 118415
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <2lor4d$krj@brahms.udel.edu>, penneys@brahms.udel.edu (Robert Penneys) writes:
|> I need to replace a car and want one which 100 watts or so of HF and 50 watts
|> or so of 2 meters or 440 will not interfere with the electronics af the
|> vehicle. Nor do I want ignition or other noise beyond the bare minimum.
|>
|> In consideration are four door sedans from the size of a Corolla up to that
|> of a Taurus. or perhaps a minivan or small pickup. Replacing a Ford
|> Aerostar.
|>
|> Will listen to all viewpoints. Tnx a million. Bob
|> --
|> Bob Penneys, WN3K Frankford Radio Club Internet: penneys@pecan.cns.udel.edu
|> Work: Ham Radio Outlet (Delaware) (800) 644-4476; fax (302) 322-8808
|> Mail at home: 12 East Mill Station Drive Newark, DE 19711 USA

My father uses a TS 50 and an IC901 in his taurus. only noise is slight alt whine on the 901. Only effect caused by xmitting is changing the speed of the key-in-ignition chime when xmitting on 440. He's happy with car.

Of course I hold onto my old 71 VW bus. Point ignition, generator, etc. all waay in the back, entire body grounded, lotsa room for rigs, etc. I'd hate to lose that car!

George Lyle, N7TNJ/6

626. Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 01:29:59 UTC
From: cravitma@cps.msu.edu
Message-ID: <2m332n$l53@msuinfo.cl.msu.edu>
Source record: 118416

Someone help!

I obtained a pack of about 500 disc capacitors, and they are all labelled with a code which I do not understand and have not found any reference for so far (ARRL handbook etc). For example, what _looks_ like a .1 uF capacitor is labelled "102Z".

Can someone mail me or post a translation of these codes?

BTW, I assume this is _not_ the tolerance coding, since there is only one line of this stuff and no other values printed on the capacitor.

Thanks.

/Matthew Cravit N9VWG

--
Matthew Cravit, N9VWG | All opinions expressed here are
Michigan State University | my own. I don't speak for MSU
E-Mail: cravitma@cps.msu.ed | and they don't speak for me.

627. Packet on old Military Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 02:06:21 UTC
From: dave@pilate.rubicon.org
Message-ID: <763697181.15snx@pilate.rubicon.org>
Source record: 118417

Has anybody out there ever connected a TNC to a PRC-77 (manpack) or
RT-524 (veh mounted) VHF Military radio. I have to do just this and
would really appreciate some advice. I understand the interface is
nu as Mil-Spec as one would think.

Thanks
DAve

--
Dave Mercer VE3XMJ | If Voting could change the system
work: mercer@dgs.dnd.ca | it would be illegal
home: dave@pilate.rubicon.org |

-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: 2.3a

mQCNAiw7jJkAAAEEALpAIvULlA/xvrzuR30NcLZE0HCHyGm5QR4ej8xM6k3AcH3T
Q3NkgV2FK5f8t/fBAhO1+ffa5K7F10B4hPqKkAASNlk1PIx9ty5oUgxAlZnfya4V
ScNIx0x2h2f3roRjiZLfNYM2zkm26sZhFQjVJxyNnluJq/xVb45/LyY+p9flAAUR
tCBEYXZpZCBNZXJjZXIgPG1lcmNlckBuY3MuZG5kLmNhPg==
=0azF
-----END PGP PUBLIC KEY BLOCK-----

628. Re: Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 04:19:29 UTC
From: alanb@sr.hp.com
Message-ID: <CMouoI.KM5@srgenprp.sr.hp.com>
Source record: 118268

Matthew B Cravit (cravitma@cps.msu.edu) wrote:
: Someone help!

: I obtained a pack of about 500 disc capacitors, and they are all
: labelled with a code which I do not understand and have not found any
: reference for so far (ARRL handbook etc). For example, what _looks_
: like a .1 uF capacitor is labelled "102Z".

: Can someone mail me or post a translation of these codes?

It's just like the resistor color code except it uses numbers instead
of colors. "102" means "10 plus 2 zeros" or 1000 pF. A 0.15 uF would
be "154" = 150000 pF = 0.15 uF.

I believe the "Z" is the tolerance. Probably Z5U.

AL N1AL

629. TX Amp for 20 mtrs QRP rigs.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 06:21:14 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar15.142114.1@ntuvax.ntu.ac.sg>
Source record: 118269
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.equipment

Hi,

Need recommendation for a small TX amp kit which takes about 4 watts output from my QRP rig and puts out 20-30 watts with
built in T-R switching (preferably solid-state T-R) and runs off 12-13.8v DC power supply. Must be small so I can fit it into my
existing rig's casing. Should be something similar to the QAMP-20 from Ramsey Hobby kits. BTW, this is for 20 meters. Tks.

73,
Daniel

630. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 12:01:57 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-763732909@unomaha.edu>
Source record: 118270
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

```
Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
==========

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

631. Re: DMM help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 19:13:44 UTC
From: cravitma@cps.msu.edu
Message-ID: <2m51d8$m7t@msuinfo.cl.msu.edu>
Source record: 118271

On 15 Mar 1994 17:21:49 GMT, strange alien beings caused Keith M. Hamilton (ak238@yfn.ysu.edu) to write:

> I am going to be purchasing a DMM at dDayton this year. I would
> like to hear from someone who has had good liuck with a certain
> meter or perhaps someone who wishes they had bought a certain
> meter.
> I am a relative beginner to building and testing circuits and
> components and I would like to buy the best meter for the
> money.
> Thanks in advance for your help!
> --
> Keith M. Hamilton 73 de NO8Z

I have had a Fluke 77 for ~2 months and am quite happy with it. It is rock-solid durable, quite functional and easy to use. Some of the features I like are:

* Large, easy to read display
* Touch hold (locks measurement so you can put down probes and then read meter)
* Measures ACV/DCV/DC mA/Resistance/Diode Check/Continuity
* Good warranty
* Lots of accessories available

I paid about $150 for my 77, you will probably (especially at Dayton) be able to find one for less.

If you want more info about the meter, drop me a note.

73 DE N9VWG

/Matthew

--
Matthew Cravit, N9VWG | All opinions expressed here are
Michigan State University | my own. I don't speak for MSU
E-Mail: cravitma@cps.msu.ed | and they don't speak for me.
GO/CS -d+@ -p+ c++ !l u+(++) e+(*) s/+ n+(---) h+ f+ !g w+(+++) t++@ r(+) y?

632. Re: DMM help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-15 20:08:31 UTC
From: exualan@exu.ericsson.se
Message-ID: <1994Mar15.200831.10419@exu.ericsson.se>
Source record: 118272

I'll second the Fluke recommendation. Mine is 12 years old and
I would love to upgrade, but the !?##*&! thing won't break no matter
how badly I treat it.

Alan, KE5JL

633. DDS Projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-16 01:44:44 UTC
From: mne1@cec1.wustl.edu
Message-ID: <2m5oac$5oi@bigfoot.wustl.edu>
Source record: 118273

Hi. I just got the March 1994 issue of 73, and I read an article on a
digital front panel for the TW-1 (Techno-Whizzy).

Apparently the TW-1 was a DDS VFO which was published in the December 1992
issue of 73.

I would really appreciate it if somebody would send me a xerox copy of
the article as I am interested in building it. I am also interested in
any other DDS projects that anyone else has come across, like the "Julieboard"
from 73 last summer.

oes anyone have any experience with these or other DDS projects?

thanks
mne1@cec.wustl.edu

Matthew Ettus
6515 Wydown Box 3451
St. Louis, MO 63105
(314) 935-1511
I will reimburse copying and postage costs
thanks

634. ACS (Al's Circuit Simulator) version 0.13 is available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-16 06:43:43 UTC
From: al@rbc.uucp
Message-ID: <1994Mar16.064343.2188@rbc.uucp>
Source record: 118274
Cross-posted to: sci.electronics,comp.lsi,comp.lsi.cad,rec.radio.amateur.homebrew

A new version of ACS (Al's Circuit Simulator) has been posted to alt.sources. It is also available by ftp from cs.rit.edu or ee.rochester.edu. (in pub/acs). If you don't have net access you can get it by dial-up from (USA) 716-272-1645.

ACS is a general purpose mixed analog and digital circuit simulator. It performs nonlinear dc and transient analyses, fourier analysis, and ac analysis linearized at an operating point. At this point the analog is stronger than the digital. (In fact, the digital part is rather weak.) It is fully interactive and command driven. It can also be run in batch mode or as a server. The output is produced as it simulates. Spice compatible models for the MOSFET (level 1 and 2) and diode are included in this release.

This version (0.13) includes several improvements including real Fourier analysis and better time step control based on truncation error. There are other minor improvements.

Since it is fully interactive, it is possible to make changes and re-simulate quickly. The interactive design makes it well suited to the typical iterative design process used it optimizing a circuit design. It is also well suited to undergraduate teaching where Spice in batch mode can be quite intimidating. This version, while still officially in beta test, should be stable enough for basic undergraduate teaching and courses in MOS design, but not for bipolar design.

In batch mode it is mostly Spice compatible, so it is often possible to use the same file for both ACS and Spice.

The analog simulation is based on traditional nodal analysis with iteration by Newton's method and LU decomposition. An event queue and incremental matrix update speed up the solution for large circuits.

It also has digital devices for true mixed mode simulation. The digital devices may be implemented as either analog subcircuits or as true digital models. The simulator will automatically determine which to use. Networks of digital devices are simulated as digital, with no conversions to analog between gates. This results in digital circuits being simulated faster than on a typical analog simulator, even with behavioral models. The digital mode is experimental and needs work. There will be substantial improvements in future releases.

ACS also has a simple behavioral modeling language that allows simple behavioral descriptions of most components including capacitors and inductors. Unfortunately, it is not well documented.

ACS uses an object oriented approach to modeling. Complex models like MOSFETS are made of simpler ones like resistors, capacitors, diodes, and any other models that may already exist. The model designer does not need to worry about details like convergence checking, bypass checking, integration, or how the new device plugs into the solution matrix because these are already taken care of by the basic models. This results in a dramatic improvement in the time it takes a researcher or model designer to install a new model, compared to Spice.

The source and documentation can be obtained by anonymous ftp from ee.rochester.edu or cs.rit.edu in /pub/acs. It can also be obtained by dial-up (USA) 716-272-1645 in /pub/acs. It may be distributed under the terms of the GNU general public license. The dial-up also has some test circuits, pre-compiled executables for Next, Sun4, MSDOS and possibly others, and documentation in dvi and postscript.

If you are tired of Spice and want a second opinion, you want to play with the circuit and want a simulator that is interactive, or you want to study the source code and want something easier to follow than Spice, try ACS.

ACS is an ongoing research project. It is being released in a preliminary phase in hopes that it will be useful and that others will use it as a thrust or base for their research. I also hope for some comments that may help me direct my research.

Albert Davis, 136 Doncaster Rd., Rochester, NY 14623.
email: atd@cs.rit.edu or davis@ee.rochester.edu
fax: 716-272-1645

635. Re: Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-16 20:42:44 UTC
From: hellman@cbnewsm.cb.att.com
Message-ID: <CMryvG.2tw@cbnewsm.cb.att.com>
Source record: 118275

In article <1994Mar16.154953.4547@newsgate.sps.mot.com>, kinzer@dtsdev0.sps.mot.com (Dave Kinzer) writes:
> profesor@world.std.com writes:
> >
> >> For example, what _looks_
> >>like a .1 uF capacitor is labelled "102Z".
> >
> >It appears to be a 3-digit code, where the first two digits are the
> >two significant digits, and the third digit is a multiplier digit.
> >Usually this is in picofarads, so your capacitor is a 100 pF or a .1uF
> >capacitor, as you guessed.
> >
>
> There are at least two errors in the preceeding paragraph. Finding
> them is left as an exercise for the student.
>
> -dave

ppphewww! glad you posted and saved me the trouble of correcting that one.
(pssst! milli,micro,nano,pico,femto,.... 10 00 pico=.001 uF)
Shel Darack WA2UBK

636. Plans for DCD-3105 board

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-16 22:18:44 UTC
From: lawrence@combdyn.com
Message-ID: <1994Mar16.221844.14769@combdyn.com>
Source record: 118276
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

I have some TNCs and some baycom boards on my multiport Packet BBS.

I was reading through the manual for one of the TNCs (DRSI DPK-2), and it talks about a DCD board option that basically goes inbetween the TCM3105 chip and its socket.

Having DCD has shown itself to be nice with the Software DCD that the KPC-3 TNC does. I have problems with Intermod and frontend overload problems, etc.

Without having to buy the board itself, are there plans on how to build this DCD unit?

And, would anybody know if it would work on Baycom modems built around the same chip.

--
WORK: lawrence@combdyn.com | PHONE 403 529 2162 | FAX 529 2516 | VE6LKC
HOME: dreamer@lhaven.uumh.ab.ca | 403 526 6019 | 529 5102 | VE6PAQ

Praxis BBS - 529 1610 | CYSNET BBS - 526 4304 | Lunatic Haven BBS - 526 6957
---
disclamer = (working_for && !representing) + (Combustion Dynamics Ltd.);

637. Crystal Filter Design program & details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 01:05:04 UTC
From: jjw@seastar.org
Message-ID: <CMsB0H.2rG@seastar.org>
Source record: 118277

For the past week or two I have been figuring out how to
design crystal IF filters using the technique described in the May
1982 article in QST by Wes Hayward. Rather than duplicate his
circuit, I used my TW-1 DDS as the signal generator and read the
results with an oscope.
I matched a large pile of surplus 10MHz computer crystals
cannibalized from dead boards, and found (from about 60 crystals) 29
crystals that matched within 10Hz (my limit of accuracy in
measurement), and they also matched for 3db bandwidth, parallel
capacitance (as measured by my radio shack multimeter) and resistance.
Armed with this data, I wrote a simple BASIC program to
perform the calculations discussed in the article. As Wes also
mentioned the importance of re-resonating each section, I added in the
calculations for the series capacitors for each crystal to get them
all to resonate more-or-less at the same frequency.
I built a 5 pole Chebychev filter with 2.2kHz bandwidth, and
hooked it up (wrongly) to my analyzer (I didn't have the right
connector and the antenna in isn't 50 ohms). I got mediocre results,
due to improper termination. Tonight, I found the right connector and
re-ran the measurements.
With no tuning at all, using the closest stock capacitance to
the calculated values, I wound up with a 2.1kHz 3db BW. Ripple was
designed to be 0.1db, but I measured about 1db of ripple. The
insertion loss was measured to be 2.3db. The60:6 shap factor is 3.34.
It drops sharply on the low side, and is more rounded on the high
side.
I'd say it was a success, all in all. As I've had quite a few
requests for the program to calculate this, here it is. Have fun with
it, and I hope to be on the air with my own SSB unit some day soon.
---------------------- cut here for program -------------------------

```
10 REM xfilter.bas by n9jzw jjw
20 REM absolutely no rights reserved - genuine free public domain software
30 REM calculates 2 through 8 pole 0.1db ripple chebychev or butterworth filters
40 REM for how to measure the parameters this program needs, see May 1982 QST's
50 REM article by Wes Hayward
60 REM and/or a future article by n9jzw on the same subject
70 CLS
80 PRINT "N-pole Crystal Filter designer"
90 DIM Q[10,2],TABLE[10,10,2],C[10],CADD[10],RF[10]
100 GOSUB 790
110 INPUT "Enter 1 for Chebychev 0.1db ripple, or 2 for Butterworth";TYPE
120 INPUT "Crystal 3db bandwidth in Hz";DELTAF
130 INPUT "Crystal series resonant frequency in MHz";FO
```

```
140 INPUT "Crystal resistance in ohms";RO
150 INPUT "Crystal parallel capacitance (usually near 5)";CP
160 INPUT "Filter bandwidth in Hz";B
170 INPUT "Order of filter";ORD
180 IF ORD >1 AND ORD <9 THEN 210
190 PRINT "Must be between 2 and 8"
200 GOTO 170
210 FOR X = 1 TO ORD-1
220 C[X] = INT(1326 * (DELTAF/(B*TABLE[ORD,X,TYPE]*FO)) - 2*CP + .5)
230 NEXT X
240 LM = 19.1/DELTAF
250 CM = 1.326E-15 * DELTAF/(FO*FO)
260 REND = (120*B)/(Q[ORD,TYPE]*DELTAF) - RO
270 PRINT "Rend =";REND
280 INPUT "Enter terminating resistance ";R
290 IF R > REND THEN 320
300 PRINT "Terminating resistance must be larger than";REND
310 GOTO 280
320 CEND = INT((159000!/(R*FO)) * SQR(R/REND-1) - CP + .5)
330 W = 2*3.14159*FO*1000000!
340 CS = (1/(RO*RO)+W*W*CEND*CEND*1E-12*1E-12)/(W*W*CEND*1E-12)
350 C = 1/(1/CS+1/CM+1/(1E-12*C[1]))
360 FEND = SQR(1/(4*3.14159*3.14159*LM*C))
370 RF[1] = FEND
380 RF[ORD] = FEND
390 FOR X = 1 TO ORD-2
400 C = 1/(1/(1E-12*C[X])+1/(1E-12*C[X+1])+1/CM)
410 F = SQR(1/(4*3.14159*3.14159*LM*C))
420 RF[X+1] = F
430 NEXT X
440 Y = Y1 = 0
450 FOR X = 1 TO ORD
460 IF RF[X] < Y THEN 490
470 Y = RF[X]
480 Y1 = X
490 NEXT X
500 CLS
510 IF TYPE = 1 THEN 540
520 PRINT "Butterworth Filter, ";
530 GOTO 550
540 PRINT "Chebychev Filter, ";
550 PRINT "BW =";B;"Hz at";FO;"MHz,";ORD;"pole with";R;"ohm terminations."
560 FOR X = 1 TO ORD
570 XL = 2 * 3.14159 * Y * LM
580 RSLT = 1 / (XL * 2 * 3.14159 * Y)
590 IF X = 1 OR X = ORD THEN 620
600 Z = 1/RSLT-1/CM-1/(C[X]*1E-12)-1/(C[X-1]*1E-12)
610 GOTO 630
620 Z = 1/RSLT-1/CM-1/(CS)-1/(C[1]*1E-12)
630 CADD[X] = INT(1/Z * 1E+12+.5)
```

```
640 NEXT X
650 PRINT "Cend =",CEND
660 FOR X = 2 TO ORD
670 PRINT USING "C # # =";X-1,X;
680 PRINT ,C[X-1]
690 NEXT X
700 PRINT "Cend =",CEND
710 PRINT "Series caps"
720 FOR X = 1 TO ORD
730 IF RF[X] = Y THEN 760
740 PRINT "X";X;"=",CADD[X]
750 GOTO 770
760 PRINT "X";X;"=",0
770 NEXT X
780 GOTO 1080
790 FOR Z = 1 TO 2
800 X = 1
810 READ Q[X,Z]
820 IF Q[X,Z] = 0 THEN 880
830 FOR Y = 1 TO 10
840 READ TABLE[X,Y,Z]
850 NEXT Y
860 X = X + 1
870 GOTO 810
880 NEXT Z
890 RETURN
900 DATA 1,1,0,0,0,0,0,0,0,0,0
910 DATA 1.6382,.7106,0,0,0,0,0,0,0,0,0
920 DATA 1.4328,.6618,.6618,0,0,0,0,0,0,0,0
930 DATA 1.3451,.685,.5421,.685,0,0,0,0,0,0,0
940 DATA 1.3013,.7028,.5355,.5355,.7028,0,0,0,0,0,0
950 DATA 1.277,.715,.539,.518,.539,.715,0,0,0,0,0
960 DATA 1.262,.722,.542,.516,.516,.542,.722,0,0,0,0
970 DATA 1.25,.727,.545,.516,.510,.516,.545,.727,0,0,0
980 DATA 0
990 DATA 1,1,0,0,0,0,0,0,0,0,0
1000 DATA 1.414,.7071,0,0,0,0,0,0,0,0,0
1010 DATA 1,.7071,.7071,0,0,0,0,0,0,0,0
1020 DATA .7654,.8409,.4512,.8409,0,0,0,0,0,0,0
1030 DATA .6180,1,.5559,.5559,1,0,0,0,0,0,0
1040 DATA .518,1.169,.605,.518,.605,1.169,0,0,0,0,0
1050 DATA .445,1.342,.667,.527,.527,.667,1.342,0,0,0,0
1060 DATA .391,1.52,.734,.551,.510,.551,.734,1.52,0,0,0
1070 DATA 0
1080 END
------------ cut here -----------------------

--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org
```

638. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 10:59:57 UTC
From: M.Willis@ee.surrey.ac.uk
Message-ID: <1994Mar17.105957.6324@ee.surrey.ac.uk>
Source record: 118278
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

In article <CMIACE.D9C@hpqmoea.sqf.hp.com>, dstock@hpqmoca.sqf.hp.com (David Stockton) writes:
|>
|> I'm happy with my choice, a Diesel powered Range-Rover derivative
|> called a "Discovery"
|>
|> Give serious thought to Diesels, no ignition, no computers
|>
|>
|> David GM4ZNX
Yes, but at a mere 18,000 pounds not many can afford such a car. Practically, I found the Cavallier reasonable RF quiet. Fiat Uno, too noisy. Diesels are definately better, they have a bigger battery too.

Mike

639. Re: QRP Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 14:06:12 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.763913245@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118279

bobspreen@aol.com (BobSpreen) writes:
>In addition to QRP Classics, try Doug Demaw's "QRP Notebook" and "Solid State
>Design for the Radio Amateur", both ARRL publications.

And SPRAT, the QRP journal from the United Kingdom
(available via an address--it's at home--in the US.)

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

640. Converting CB to 10 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 14:21:33 UTC
From: erik@csn.org
Message-ID: <CMtBvy.ID3@csn.org>
Source record: 118280
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

I have had several QSOs with people on 10 meters who were using converted
CBs. I have a CB sitting in my junk box and was wondering if it could be put
to use in the 10 meter band. Is there some service center I can send it
to have it done? Is it something I can do myself? (The CB in question is
a Cobra Model 19 Plus, manufactured in 1988.) In general, how hard is it
to do this (ie maybe easier on older model CBs)?

Enquiring minds want to know. :-)

TNX and 73,
Erik
--
Erik Mugele * erik@csn.org * "O child learn your ABZ's
* mugele@sil.org * and memorize them well
Ham Radio: N5XYX * No NeXTMail yet! * and you shall learn to talk and think
DoD #: 1030 * Phone: 719.550.6202 * and read and write and spel."

641. Re: Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 15:50:34 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Mar17155034@mipgsun.mipg.upenn.edu>
Source record: 118284

Well, I have some capacitors that have 10M listed on them. I know
that the M is the EIA code for 20% tolerance but am having trouble
with the 10 part since if it were 10pF it should read 100. [I was told
the caps were 10pF.] I can't find a code anywhere with only two digits.
Underneath the 10M code were the EIA codes for temperature and the
code 1KV which I interpret to mean that it can handle 1 Kilovolt.

--
Medical Image Processing Group | Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
418 Service Drive | VOICE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

642. 10-50KHZ Tranceivers ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 16:17:17 UTC
From: dh1iar@insu1.etec.uni-karlsruhe.de
Message-ID: <2m9vqd$2nn@nz12.rz.uni-karlsruhe.de>
Source record: 118281

Hello together,
i plan to home-brew some very long waved tranceivers in an walky-talky
format. Are there any experiences with such area ? Any schematics,
PCB-Layouts? Where can i get infos abt Ferrit-Antenna-Design ?
would be vy glad to see some responses here ore via mail.
tnx and vy 73 de peter dh1iar

643. Re: Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 17:44:08 UTC
From: jcbach@kocrsv01.delcoelect.com
Message-ID: <1994Mar17.174408.7830@kocrsv01.delcoelect.com>
Source record: 118282

In article <2m332n$l53@msuinfo.cl.msu.edu>, cravitma@cps.msu.edu (Matthew B Cravit) writes:
> Someone help!
>
> I obtained a pack of about 500 disc capacitors, and they are all
> labelled with a code which I do not understand and have not found any
> reference for so far (ARRL handbook etc). For example, what _looks_
> like a .1 uF capacitor is labelled "102Z".
>
> Can someone mail me or post a translation of these codes?
>
> BTW, I assume this is _not_ the tolerance coding, since there is only

My prsumtion, based on the MANY capacitors I've run across, is that the "102" stands for 1000 pF (i.e. .001uF), where the "1" and the "0" are the value and the "2" is the multiplier (works just like resistor color code, but can be done in black ink only . . .)

As for the "Z", it's probably a tolerance.
Digi-Key sells Panasonic ceramic disks, and according to the part numbers listed:

"J" = 5%
"K" = 10% <-- most of the caps we use 'round here
"Z" = +80%/-20%
"M" = 20%

A .1uF would be a "104", i.e. 100,000pF or 100,000/1,000,000=.1uF
=====
"4"

--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Circuits Bldg Blocks Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

644. Re: QRP Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-17 21:37:28 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.763940386@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118283

My email to g3rjv@gqrp.demon.co.uk bounced, so will try this:
(Maybe you can send me a better email address?)

g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV) writes:
>mac@cis.ksu.edu "Myron A. Calhoun" writes:
>> And SPRAT, the QRP journal from the United Kingdom....

>A request to me will receive a sample of SPRAT and a membership application
>form. Also suggest G QRP Club CIRCUIT HANDBOOK available from N8ET
>(n8et@delphi.com)

>George Dobbs G3RJV

In response to my post, someone else mailed me a note saying

>Perhaps not. Luke Dodds is a silent key. Jim Kearman said
>the settling of his estate delayed the last QRP Quarterly.

So I'm VERY GLAD to see you on the Internet!

I've been a SPRAT member for 2-3 years, but I've never heard of
the CIRCUIT HANDBOOK; what's in it?

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

645. Re: Meter Shunts, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 03:11:18 UTC
From: tomb@lsid.hp.com
Message-ID: <CMuBIu.5MC@hpcvsnz.cv.hp.com>
Source record: 118285

: A quick and easy method to find the internal resistance of an unknown
: meter is to put a pot and power supply in series with it and adjust the
: pot for a full scale reading. Now put another pot across the meter and
: adjust it until the meter reads half scale. Read the value of the pot
: with an ohmmeter (out of circuit) and you'll have the internal resistance
: of the unknown meter.

Be sure the series resistor has a much higher resistance than the
meter, or the second pot will affect the total current significantly.

: The internal resistance of a meter is a function of meter type and
: meter sensitivity (obviously). In a moving coil meter, you can think
: of the movement as a motor stalled against a spring, and the resistance
: is a result of the motor stall torque against the spring.

In other words, just the resistance of the coil and connecting wires
(possibly with internal shunt...) But it's a good point that such
a meter is a motor--or generator. If you shake the meter (specifically
rotate it) it will generate some voltage (unless you shake it so hard
it falls apart inside ;-).

646. Re: Capacitor code (NOT color code)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 07:00:55 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <CMuM5J.Dw0@news.Hawaii.Edu>
Source record: 118286

In article <YEE.94Mar17155034@mipgsun.mipg.upenn.edu> yee@mipg.upenn.edu (Conway Yee) writes:
>Well, I have some capacitors that have 10M listed on them. I know
>that the M is the EIA code for 20% tolerance but am having trouble
>with the 10 part since if it were 10pF it should read 100. [I was told
>the caps were 10pF.] I can't find a code anywhere with only two digits.
>Underneath the 10M code were the EIA codes for temperature and the
>code 1KV which I interpret to mean that it can handle 1 Kilovolt.

Just like English spelling rules, there's exceptions. If the pF is
100 or less the actual value is stamped on the cap.

Here's a neat way to measure capacitance: Use a 120VAC to 12VAC
transformer and place your unknown cap in series with a high-valued
resistor (megohm range) across the 12VAC and measure the voltage drop
across the cap. Frequency is 60Hz, compute Z = E/I, use Z formula to
compute capacitance (or inductance, too!).

Cheapest L/C meter in town!

73,
Jeff NH6IL

647. Re: Whats the loss across a BNC to PL259 ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 15:45:20 UTC
From: mack@helix.nih.gov
Message-ID: <1994Mar18.154520.10657@alw.nih.gov>
Source record: 118287

In article <2ma38c$p48@agate.berkeley.edu> ron@etch-eshop.Berkeley.EDU (Ronald Viegelahn) writes:
>
> Does anyone happen to know what the insertion loss would be
>of a BNC to PL259 adapter at ~144 (2m band) ?
>
> I plan on using my kenwood ht to drive a henry radio 50W amp.
>
> The ht has a BNC output and the amp has a SO238 input. Would

I've had no end of wierdness dealing with RG-58 and poor
quality connectors. When I changed all my SO/PL connectors to N and
changed my coax to RG-142 (teflon-same size as RG-58 and I used crimp on
N-connectors on it), my output power went from 80W to 110 W out of my 2m brick.
So rather than worrying about these adaptors, change to a more
reliable
system

Joe Mack NA3T
mack@ncifcrf.gov

648. Re: Meter Shunts, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 16:11:25 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar18.161125.26577@ke4zv.atl.ga.us>
Source record: 118288

In article <CMuBIu.5MC@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>: A quick and easy method to find the internal resistance of an unknown
>: meter is to put a pot and power supply in series with it and adjust the
>: pot for a full scale reading. Now put another pot across the meter and
>: adjust it until the meter reads half scale. Read the value of the pot
>: with an ohmmeter (out of circuit) and you'll have the internal resistance
>: of the unknown meter.
>
>Be sure the series resistor has a much higher resistance than the
>meter, or the second pot will affect the total current significantly.

Good point. The idea is that the series resistor and PS form a constant
current source, so the series resistor value has to be significantly
higher than the meter and shunt resistances. If you have an adjustable
lab supply that can be configured as a constant current source, you
can use that directly instead.

>: The internal resistance of a meter is a function of meter type and
>: meter sensitivity (obviously). In a moving coil meter, you can think
>: of the movement as a motor stalled against a spring, and the resistance
>: is a result of the motor stall torque against the spring.
>
>In other words, just the resistance of the coil and connecting wires
>(possibly with internal shunt...) But it's a good point that such
>a meter is a motor--or generator. If you shake the meter (specifically
>rotate it) it will generate some voltage (unless you shake it so hard
>it falls apart inside ;-).

Well no, the stall current is different than just that which you'd
have with only the resistance of the windings and possible internal
shunt. Otherwise you could just measure the unknown meter with an
ohmmeter. That most assuredly won't give the correct result with a
moving coil meter. That spring in the meter is placing a real load
on the "motor" that's reflected in the apparent resistance of the
coil. The work of fighting that spring isn't free.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

649. Re: QRP Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 17:58:48 UTC
From: tkell@nyx10.cs.du.edu
Message-ID: <1994Mar18.175848.12326@mnemosyne.cs.du.edu>
Source record: 118291

George Dobbs - I got your address and tried to send you mail but the Postmaster says that it cannot find your address. Do you know your numeric address??
Could you please let me know so I can email to you?

Thank you

Ted Kell@lark.jsc.nasa.gov (kell@128.157.53.88)
KC5CUW

650. QSKing an AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 20:02:00 UTC
From: klf@ecdcsvr.tredydev.unisys.com
Message-ID: <1994Mar18.200200.14181@ecdcsvr.tredydev.unisys.com>
Source record: 118289

Hi all, I hv a Heath SB1000 (Ameritron AL80A), that I wud like to add QSK to.
ALl the QSK kits are a bit expensive for my taste, but I was wondering. Is it
just the speed of the internal relay that keeps this thing from being QSK? Afterreading
Richard Measure's (SP?) article in QST, if I just replace the internal
relay with a high speed vacum relay (Jennings) will I be able to run it in QSK
or are there other restraints. Tnks for any help you can give.

DE KA3PLS

651. Circuit simulation software for teaching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-18 20:32:58 UTC
From: sbbrown@magnus.acs.ohio-state.edu
Message-ID: <199403182032.PAA25744@bottom.magnus.acs.ohio-state.edu>
Source record: 118292
Cross-posted to: ieee.general,rec.radio.amateur.homebrew,rec.radio.amateur,sci.physics.electromag,sci.electronics

I'm conducting a survey about the use of computer programs for digital
and analog circuit simulation in ee curricula. I'd like to know what
software is being used at other universities, what platforms it's run on,
what level (undergraduate/graduate) students are using it, and what problems
other ee departments have had making this kind of software available for
instructors and students.
In particular, I'd like to know if there are fairly simple simulation
packages (say 20-50 gates or components) that will run under UNIX or X-windows,
or if there are DOS/Windows simulators that will run on a '286.
Here at the Ohio State University we've experimented with several
approaches, but none of them has been entirely satisfactory. There are
some very sophisticated packages available for our UNIX/X-windows
workstations that are suitable for the graduate level courses and
research, but haven't proved satisfactory for the sophomore level courses.
They have a lot of features that the beginning students just don't need.
There are simpler packages available for DOS, but we can't run them on
the UNIX workstations (there is a DOS/Windows emulation package, but it
emulates a 286, and the simulator requires a 386.) We are reluctant to
buy a lot of PCs, as the experience of other departments in the university
indicates that PC networks are harder to maintain than the present network
of UNIX workstations.
--
Steve Brown, N8HFI sbbrown@magnus.acs.ohio-state.edu

652. Small correction to XFILTER.BAS posted yesterday

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-19 04:36:42 UTC
From: jjw@seastar.org
Message-ID: <CMwA57.7qw@seastar.org>
Source record: 118290

```
Due to an un-corrected type in the original QST article, my
crystal filter design program will result in incorrect values in one
case. Change line 1020 to read as follows:

1020 DATA .7654,.8409,.5412,.8409,0,0,0,0,0,0,0

and this should correct the problem. Many thanks for those
who pointed this out.
--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org
```

653. Parasitic oscillations, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-19 18:22:39 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar20.022239.1@ntuvax.ntu.ac.sg>
Source record: 118293

Hi,

I am building a Ramsey kit QAMP-20, TX Amp with 20 watts output on 20 meters based on MOSFETS and I think I am experiencing
parasitic oscillations at VHF, especially once the MOSFET gets hot. Why does this take place only when its hot? When its cool, say
the first 20 seconds of keying, it seems ok but once the MOSFET gets hot, there goes the oscillations. Any ideas how I can fix
this? I am redesigning the PCB with my own layout, is this advisable? The original board is single sided but I am not sure if their
layout is well considered. The oscillations further cause the T-R relay to go beserk, understandably so. I am not too familiar with
MOSFET design so I don't know what to do exactly. Will appreciate any advice.

73,
Daniel

654. Packet on old Military Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 02:39:00 UTC
From: bob.albert@ledge.com
Message-ID: <cf.340.437.0N2EE4F0@ledge.com>
Source record: 118294

The only problem I can see about using old gear on packet is the switching time. You will have to make sure the delay is long enough to allow the rig to change over to transmit from receive. Also, it may take a fair amount of current in the PTT line; if so you will have to add a buffer. 73 DE K6DDX

655. Re: TX Amp for 20 mtrs QRP rigs.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 04:08:17 UTC
From: leigh@coyote.rain.org
Message-ID: <leigh.764136230@coyote>
Source record: 118295
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.equipment

asirene@ntuvax.ntu.ac.sg writes:

>Hi,

> Need recommendation for a small TX amp kit which takes about 4 watts output from my QRP rig and puts out 20-30 watts with
>built in T-R switching (preferably solid-state T-R) and runs off 12-13.8v DC power supply. Must be small so I can fit it into my
>existing rig's casing. Should be something similar to the QAMP-20 from Ramsey Hobby kits. BTW, this is for 20 meters. Tks.

>73,
>Daniel

Daniel, if you stumble upon a small CB ampflier, you might try using it
with your 20 meter QRP rig. Many of these amps are very broad banded, if
sometimes somwhat dirty. I know of a local ham who sometimes steps up
his 5 watt Ten Tec rig to about 50 watts on 40 meters, using a CB amp.

--Leigh/KM6JE.

656. Re: DownEast Kits ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 10:12:02 UTC
From: knight@ka1dt.mv.com
Message-ID: <knight.31.000A33B2@ka1dt.mv.com>
Source record: 118302

In article <boley.d-100394145630@129.228.248.65> boley.d%wec@dialcom.tymnet.com () writes:

>Anybody have any comments on the DownEast microwave kits ??

Very good stuff -- but it's not a heathkit, you probably need a little bit of building experience.

657. 'Magazine - Mechanix Illustrators, 1955, Crystal Set'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 12:24:50 UTC
From: btl@goofy.att.com
Message-ID: <CMyqHE.3sw@nntpa.cb.att.com>
Source record: 118296
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.mag,misc.books.technical

folks,

talk about a unique request - does anyone have the issue of mechanix
illustrators (1955) which has an ad for 'the crystal set'? my father
is looking for it. i believe this magazine (by CBS Communications)
is now Home Mechanics.

please email me your responses, as i don't normally read these groups...

thanx in advance,
--
%%%
%% The Linguistic Tongue, AT&T %% C Code. C Code Run. Run, Code, RUN! %%
%% btl@hogpf.att.com %% PLEASE!!!! %%
%%%

658. Re: Parasitic oscillations, help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 21:18:49 UTC
From: frbspd@crl.com
Message-ID: <2miejp$n6q@crl.crl.com>
Source record: 118297

asirene@ntuvax.ntu.ac.sg wrote:
: Hi,

: I am building a Ramsey kit QAMP-20, TX Amp with 20 watts output on 20 meters based on MOSFETS and I think I am experiencing
: parasitic oscillations at VHF, especially once the MOSFET gets hot. Why does this take place only when its hot? When its cool, say
: the first 20 seconds of keying, it seems ok but once the MOSFET gets hot, there goes the oscillations. Any ideas how I can fix
: this? I am redesigning the PCB with my own layout, is this advisable? The original board is single sided but I am not sure if their
: layout is well considered. The oscillations further cause the T-R relay to go beserk, understandably so. I am not too familiar with
: MOSFET design so I don't know what to do exactly. Will appreciate any advice.

: 73,
: Daniel

Ramsey's designs tend to be pretty minimalist for their amps.
Not being familiar with this design, I would suggest the following.

1). If there is a resistor from the gate of the MOSFET to ground, place a ferrite bead over the gate end of the resistor and solder it back down.

2.) Make sure the all the lead lengths on every component are short as possible.

3.) Use more bypassing on the V+ feed, in theory there should be a coil through which V+ is fed to the transistor, place .001, .1 and 50-100 uf caps on the side where V+ is brought to the board. Wind the V+ connecting wire through a binocular balun once or twice.

4.) Knowing Ramsey, they have probably used a rather crude biasing arrangement, this may have to be changed. Again, without ciruit details, this is all I could suggest in that regards.

5.) Make sure the ciruit board is well attached and grounded to a slab of heat sink and metal chassis, depending on the construction. A continuous sheet of metal underneath an RF ciruit will do wonders for it.

6) What type of load is being used for testing ? Be sure that no problems exist there. Use a proper, non-inductive load rated for the power you will be using. Checks for any shorts or open conditions in the cables. Make sure you do not have any resin bridges between pads on the circuit board, clean off with alcohol.

I am sure there are other things to consider, with more details I could be a bit more direct in my suggestions.

Stephen Dunifer

659. Re: DownEast Kits ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-20 22:50:01 UTC
From: phil@epoch.geol.scarolina.edu
Message-ID: <2mijup$p6m@epoch.geol.scarolina.edu>
Source record: 118298

In <knight.31.000A33B2@ka1dt.mv.com> knight@ka1dt.mv.com (Dave Knight) writes:

>In article <boley.d-100394145630@129.228.248.65> boley.d%wec@dialcom.tymnet.com ()
writes:

>>Anybody have any comments on the DownEast microwave kits ??

>Very good stuff -- but it's not a heathkit, you probably need a little bit of
>building experience.

After building the DEM432 RX and LO kits, I'd say I'm happy with the
results. Those chip caps are very tiny though. Good near-vision
is handy (or a good magnifying glass in my case :-)).

The PSK signal (435.91) from the FO-20 satellite is fairly strong without a
preamp and using an indoor antenna. I'm using the HR-2600 for the 28 Mhz out.

There were a couple of reviews about the DownEast kits in QST.

Phil Moore, Geological Sciences, USC, Columbia,SC, 29208
Email:phil@epoch.geol.scarolina.edu Packet:ad4fh@#col.sc.usa.noam
--
Phil Moore, Geological Sciences, USC, Columbia,SC, 29208
StratMod Group/Signals Project GEOL<->CSCI (803)777-5202, FAX 777-6610
Email:phil@epoch.geol.scarolina.edu Packet:ad4fh@kc4gym.sc.usa.noam(.earth.sol)

660. COMPUTER AS A REPEATER CONTROLLER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 01:47:19 UTC
From: jerrys@holly.can.com
Message-ID: <CMzrMv.C8L@holly.can.com>
Source record: 118299

I would like to setup a 70cm repeater using on of my xt's since they
only collect dust anyway. Is there anyone out there using a
computer for this purpose.

Or on the other hand, can anyone recommend a cheap controller.
with a few features.

Drop me a line.
Thanks in Advance
jerrys@can.com

661. Re: Converting CB to 10 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 04:56:16 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <Cn00Ds.Dzt@news.Hawaii.Edu>
Source record: 118300
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <CMtBvy.ID3@csn.org> erik@csn.org (Erik Mugele) writes:
>I have had several QSOs with people on 10 meters who were using converted
>CBs. I have a CB sitting in my junk box and was wondering if it could be put
>to use in the 10 meter band. Is there some service center I can send it
>to have it done? Is it something I can do myself? (The CB in question is
>a Cobra Model 19 Plus, manufactured in 1988.) In general, how hard is it
>to do this (ie maybe easier on older model CBs)?

Eric: Check the ads in any QST magazine - there's a company that sells
11 to 10 meter conversion kits. Also, send an email to info@arrl.org
and only write:
HELP
INDEX
QUIT
- when you get the index (via email) look for a file titled something
like CB-10M - order it according to the instruction in the `HELP' file
you receive.

Jeff NH6IL

662. Re: Series Diodes (was Re: Paralleling Power Di

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 07:38:14 UTC
From: mjsilva@ted.win.net
Message-ID: <194@ted.win.net>
Source record: 118301

In article <3694@grivel.une.edu.au>, Sakari Mattila (smattila@metz.une.edu.au) writes:
>A small slice of history ... Old (pre-1980's) silicon power diodes were
>not controlled avalanche type. They were destroyed by overvoltages. All
>new rectifier diodes (except some Schottky diodes) act like zeners and
>are destroyed only (in practice) by overheating. Thus capacitors are no
>longer needed if the wiring is equal for each of the series connected diodes.
>Some power rectifier manuals explaint this.
>
>

Thanks for the info. Does that mean that older part numbers, e.g.
1N400X, have been redesigned to be controlled avalanche? One last
question: If I look into a new, commercial HV supply, what will I
find? Do they even use multiple discrete series diodes commercially,
or just single HV assemblies?

Mike, KK6GM

663. Update on 'Magazine - Mechanix Illustrated, 1930s, Crystal Set'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 11:18:02 UTC
From: btl@goofy.att.com
Message-ID: <Cn0I22.662@nntpa.cb.att.com>
Source record: 118303
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.mag,misc.books.technical

In article <CMyqHE.3sw@nntpa.cb.att.com>, -B.T.LING <btl@goofy.att.com> wrote:
>folks,
->
->talk about a unique request - does anyone have the issue of mechanix
->illustrators (1955) which has an ad for 'the crystal set'? my father
->is looking for it. i believe this magazine (by CBS Communications)
->is now Home Mechanics.

oops, i goofed - the mechanix illustrators should be 'mechanix
illustrated', and the article (not ad) is from the 1930's.

can anyone find this for me dad? please email me as i don't
normally read these groups...

thanx in advance,
--
%%%
%% The Linguistic Tongue, AT&T %% C Code. C Code Run. Run, Code, RUN! %%
%% btl@hogpf.att.com %% PLEASE!!!! %%
%%%

664. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 14:59:01 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <Cn0sAE.KnJ@hpqmoea.sqf.hp.com>
Source record: 118304
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

Mike Willis (M.Willis@ee.surrey.ac.uk) wrote:
: In article <CMIACE.D9C@hpqmoea.sqf.hp.com>, dstock@hpqmoca.sqf.hp.com (David Stockton) writes:
: |>
: |> I'm happy with my choice, a Diesel powered Range-Rover derivative
: |> called a "Discovery"
: |>
: |> Give serious thought to Diesels, no ignition, no computers
: |>
: |> David GM4ZNX
: Yes, but at a mere 18,000 pounds not many can afford such a car. Practically, I
: found the Cavallier reasonable RF quiet. Fiat Uno, too noisy. Diesels are
: definately better, they have a bigger battery too.

: Mike

18,000 ho ho, you've been reading the brochures ! Just decide on a few creature comforts, a radio other than the one that comes standard (unbelievably nasty) and you are talking a lot more dosh still. I managed to resist the temptation of the central heating boiler and freezer, but occasionally wonder about adding a winch. The headlamps are a bit lacking (remember Spike Milligan's landladies' light-bulb jokes?) so a pair of decent lamps is essential, and the lamp bracket needed is #200+ bull-bar shaped... these things are not much diffeerent to range-rover prices when you get to decent levels of equipment...

With a heavy trailer behind and a pair of large horses, it's true class shows.

The local RIS man has been given a Discovery with a pneumatic mast through the roof. He's as happy as the proverbial dog with 2 tails. they've bolted a 240v generator where the airconditioner pump would go.

Note for US readers, see lower photo on Feb QST cover to see one of these vehicles out for a little fun....

Cheers
David

665. Simple Tx/Rx?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 18:13:46 UTC
From: gsegalli@ic1d.harris.com
Message-ID: <Cn11B0.Hx2@news.ess.harris.com>
Source record: 118305

I want to build an RF remote shutter release for a camera.
The idea is to push a button on a transmitter and then have
the receiver short two wires to trigger the electronic
shutter of the camera. I need a max range of about 50' and
it would be nice to have the receiver fairly insensitive to
unwanted noise.

I have seen several designs for simple transmitters (CW, tone
transmitters, etc.) They are simple (just a few parts, with
coils I can wind myself), small and cheap to build. They seem
to have adequate power for this application.

What I havn't seen is a simple receiver circuit.
If you have any ideas/designs/schematics for simple receivers
or TX/RX pairs please email or post them.

Thanks,
Greg

666. Re: Simple Tx/Rx?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 20:00:40 UTC
From: tomb@lsid.hp.com
Message-ID: <Cn1694.I2z@hpcvsnz.cv.hp.com>
Source record: 118306

Greg Segallis (gsegalli@ic1d.harris.com) wrote:
: I want to build an RF remote shutter release for a camera.
: I need a max range of about 50' and
: it would be nice to have the receiver fairly insensitive to
: unwanted noise.

: I have seen several designs for simple transmitters (CW, tone
: transmitters, etc.) They are simple (just a few parts, with
: coils I can wind myself), small and cheap to build. They seem
: to have adequate power for this application.

: What I havn't seen is a simple receiver circuit.

There was an article in RF Design magazine about three years ago
(look in the Dec. 92 or Dec. 91 article index under "receivers")
about a very simple receiver. It was the receiver only, no data
processing. Nice to have some simple encoding to prevent falsing.

Also, if you are willing to buy, look in DigiKey: they now carry
a rx/tx pair with encoding, about $40 for the pair as I recall.
These include address encoding/decoding, like garage door openers.

Finally, you can pick up pager receiver guts very cheaply
sometimes: like around $10 for a respectable narrow-band FM
receiver. This will make the transmitter more complicated, since
it couldn't very well be just LC oscillator controlled.

667. Re: Meter Shunts, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 20:07:03 UTC
From: tomb@lsid.hp.com
Message-ID: <Cn16Jr.I6x@hpcvsnz.cv.hp.com>
Source record: 118307

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: >: The internal resistance of a meter is a function of meter type and
: >: meter sensitivity (obviously). In a moving coil meter, you can think
: >: of the movement as a motor stalled against a spring, and the resistance
: >: is a result of the motor stall torque against the spring.
: >
: >In other words, just the resistance of the coil and connecting wires
: >(possibly with internal shunt...) But it's a good point that such
: >a meter is a motor--or generator. If you shake the meter (specifically
: >rotate it) it will generate some voltage (unless you shake it so hard
: >it falls apart inside ;-).

: Well no, the stall current is different than just that which you'd
: have with only the resistance of the windings and possible internal
: shunt. Otherwise you could just measure the unknown meter with an
: ohmmeter. That most assuredly won't give the correct result with a
: moving coil meter. That spring in the meter is placing a real load
: on the "motor" that's reflected in the apparent resistance of the
: coil. The work of fighting that spring isn't free.

The work involved in a system that isn't moving is left as an exercise
for the Physics 100 students. For the electrical types, consider the
back EMF for DC currents in a coil that is NOT moving, but in a constant
magnetic field.

668. Re: Best cars for mobile HF/VHF??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-21 20:17:13 UTC
From: serafin@metronet.com
Message-ID: <Cn170q.BzH@metronet.com>
Source record: 118313
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,alt.test

Hey what about a HUMMER!!

669. Re: Meter Shunts, etc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 00:40:44 UTC
From: tomb@lsid.hp.com
Message-ID: <Cn1J7w.M3E@hpcvsnz.cv.hp.com>
Source record: 118308

Doug Snowden (drs@ccd.harris.com) wrote:
: I have a few meters laying around, and I need to change the fullscale range
: of most of them, to me useful. For example, I have a meter that has an

etc.

Folk have posted about making shunts, but I haven't seen consideration about the damping in the meter after you put a shunt across it. Many times this isn't an issue at all, but be aware that if you put a short across a d'Arsonval meter (moving coil), the damping will become much greater; a shunt is nearly a short. This means that the meter won't respond as quickly as it would if simply fed a current. Some movements are built underdamped (oscillate a bit before settling in to the final indication), and these could actually be helped by a shunt. One way to get around excessive damping caused by a shunt is to add a bit of resistance in series with the meter, but the down side of this is that the shunt then must be higher resistance and will dissipate more power and drop more voltage.

It's possible to use the back EMF generated by the moving coil to characterize the meter's damping (or similarly, Q) and frequency, much as is done for speaker drivers. I doubt many hams would care that much about it, but for example the ballistics of a VU meter are pretty well defined, and people dealing with lots of meters do take things like this into account.

670. Re: Converting CB to 10 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 02:47:38 UTC
From: jherman@uhunix3.uhcc.Hawaii.Edu
Message-ID: <Cn1p3E.4Ap@news.Hawaii.Edu>
Source record: 118309
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <WAF.94Mar21163356@sunfish.zk3.dec.com> waf@sunfish.zk3.dec.com (William Freeman USG) writes:
> Note that it's probably not worth converting a CB to 10m
>*unless* the CB is an SSB model.

Not True! Keying the driver stage and adding an simple BFO to the receiver would give you a neat CW xcvr.

Jeff NH6IL

671. Re: Simple Tx/Rx?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 08:29:42 UTC
From: phr@netcom.com
Message-ID: <phrCn24xI.7vt@netcom.com>
Source record: 118310

In article <Cn11B0.Hx2@news.ess.harris.com>,
Greg Segallis <gsegalli@ic1d.harris.com> wrote:
>I want to build an RF remote shutter release for a camera.
>I have seen several designs for simple transmitters (CW, tone
>transmitters, etc.) They are simple (just a few parts, with
>coils I can wind myself), small and cheap to build. They seem
>to have adequate power for this application.
>
>What I havn't seen is a simple receiver circuit.
>If you have any ideas/designs/schematics for simple receivers
>or TX/RX pairs please email or post them.

Get yourself a pair of cheap toy walkie talkies equipped with
a morse code key. Hack the speaker output of one of them to
feed into a 567 tone decoder tuned to the audio freq. of the
morse code beep, and use the 567 output to trigger your camera.
Then just push the morse code button on the transmitting HT
in order to fire the shutter. Then you don't need to build
either the transmitter or the receiver. Just hack 3 or 4 parts
into the cheap HT, which usually has plenty of room inside, even
the micro miniature kind. The cheap HT's are about $10-15 a pair
(or hit a garage sale), plus the tone decoder is around $2 in
parts. Alternatively, pay $1000+ for something similar from Nikon...

672. Re: Circuit simulation software for teaching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 15:15:31 UTC
From: "William P. Osborne" <wosborne@nmsu.edu>
Message-ID: <17331.wosborne@nmsu.edu>
Source record: 118311

On 18 Mar 1994 15:32:58 -0500, Stephen B. Brown wrote:

>
> I'm conducting a survey about the use of computer programs for digital
>and analog circuit simulation in ee curricula. I'd like to know what
>software is being used at other universities, what platforms it's run on,
>what level (undergraduate/graduate) students are using it, and what problems
>other ee departments have had making this kind of software available for
>instructors and students.
Steve: We are using B^2 Logic and B^2 Spice by Brown Bag Software here
at New Mexico State U. The logic program is pretty good and will run on
any level DOS machine. The version of Spice they have is full of bugs and
runs under windows. 73 AA5ZQ-Bill

673. Re: Whats the loss across a BNC to PL259 ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 18:00:02 UTC
From: lawrence@combdyn.com
Message-ID: <1994Mar22.180002.1211@combdyn.com>
Source record: 118312

In article <2md38c$6rq@edwin.bga.com> miltonm@bga.com (Milton D. Miller II) writes:
>Not a very scientific survey, but I have noticed that while
>adapters with BNC male and UHF female are ok, the ones that
>have BNC female and UHF male are create horrible SWR on my
>power meter. Has anyone else seen this?
>
That's interesting....my BNC mail to UHF female....had a horrible affect on
my SWR. Replacing the it with a UHF coupler, a UHF male to BNC female and
a 4' section of RG58/U with BNC males made a big difference....it also allowed
to put the HT in a better position next to my computer (next to an extra
muffin fan to keep it cool too).

--
WORK: lawrence@combdyn.com | PHONE 403 529 2162 | FAX 529 2516 | VE6LKC
HOME: dreamer@lhaven.uumh.ab.ca | 403 526 6019 | 529 5102 | VE6PAQ

Praxis BBS - 529 1610 | CYSNET BBS - 526 4304 | Lunatic Haven BBS - 526 6957
---
disclamer = (working_for && !representing) + (Combustion Dynamics Ltd.);

674. Changing freq of Channel Elements on GE Master II Radios (HELP)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-22 18:30:39 UTC
From: cmcl@beach.cis.ufl.edu
Message-ID: <cmcl.19.00128357@beach.cis.ufl.edu>
Source record: 118315
Cross-posted to: rec.radio.amateur.homebrew,rec.ham-radio,rec.radio.amateur.equipment

Hey everyone, I am looking for some information on how to retune the channel elements for GE Master II radios. (I guess these channel elements are also referred to as "ICOMs" i.e. they have the word ICOM written on top of them, anybody who is familiar with these knows what I am talking about.) Anyway, I want to order crystals for these things and retune them myself, rather than sending the channel elements in to be recrystalled for me. (I am hoping to save some money.....) I am hoping that someone out there can fill me a little bit more on how these things are tuned. I know that there are several small parallel lines on the back of the circuit board that are supposed to be used for varying the capacitance, but am not sure of exactly how to go about this. I don't want to have to cut and resolder one by one to see what happens... Looking inside the units that I have, none of these lines have been cut, they are all connected... Anyway, any help would be appreciated!!!

Thanks in advance! - JON

Please reply either here or to email at CMCL@BEACH.CIS.UFL.EDU

675. Help with trap dipole

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 01:34:00 UTC
From: ed.lang@pplace.com
Message-ID: <5c.232.15.0N17B0EF@pplace.com>
Source record: 118314

I would like to build a trap dipole for 160M, 75M, 40M. Can you help me with the traps? Maybe suggest a construction article you have seen.

Thanks

 SLMR 2.1a KC4YLX DX-CLUSTER & WA4TFZ PBBS ed.lang@pplace.com

676. Need Dayton room

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 04:09:44 UTC
From: penneys@brahms.udel.edu
Message-ID: <2mofe8$h5h@brahms.udel.edu>
Source record: 118316
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc,rec.radio.amateur.antenna

Please forgive the cross posting if you will.

I need a room for two for Thursday, Friday and Saturday night at Dayton.
We have one room at the Hampton House with the FRC, and want one more
closeby if possible.

CU at contest forum and dinner, FRC suite, hamfest etc.

Tnx Bob

--
Bob Penneys, WN3K Frankford Radio Club Internet: penneys@pecan.cns.udel.edu
Work: Ham Radio Outlet (Delaware) (800) 644-4476; fax (302) 322-8808
Mail at home: 12 East Mill Station Drive Newark, DE 19711 USA

677. How to make a Phonepatche?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 04:41:57 UTC
From: al152511@academ01.mty.itesm.mx
Message-ID: <al152511.764397717@academ07>
Source record: 118317

Hello, all

I am looking for a phonepatche for my CB and 10 meter radios, just like one of a fellow ham.

This is a manual device, the size of a little box, atached to the phone and to the rig, and my friend told me it costed him about $50 U.S. Dlls., but I have not been able to find it anywhere, and would like to know if it is too dificult to build it at home.

How can I build this thing?
Some time ago, I posted this same question, and somebody told me it can be made from some kind of old telephone.

Muchos Thanks in advance

678. Re: QSK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 15:16:25 UTC
From: wrt@eskimo.com
Message-ID: <Cn4IFL.MLw@eskimo.com>
Source record: 118218

In article <9403221804.aa02374@cor5.pica.army.mil>,
<Waltk@pica.army.mil> wrote:
>
>>Hi all, I hv a Heath SB1000 (Ameritron AL80A), that I wud like to add
QSK to.
>>ALl the QSK kits are a bit expensive for my taste, but I was
wondering. Is it
>>just the speed of the internal relay that keeps this thing from being
QSK?
>>Afterre
>>ading Richard Measure's (SP?) article in QST, if I just replace the
internal
>>relay with a high speed vacum relay (Jennings) will I be able to run
it in QSK
>>or are there other restraints. Tnks for any help you can give.
>>
>>DE KA3PLS
>
>You are referring to the article by Rick Measures, AG6K, in January
1994 QST,
>titled "The Nearly Perfect Amplifier."
>
>I just finished implementing Measure's QSK, electronic bias switching,
and
>variable bias voltage circuits into my home brew amplifier. The results
are
>outstanding. It was relatively easy to do, it can be outboarded to an
existing
>amp, as mine is, and it works flawlessly. This guy sure knows his
amplifiers!
>
>I built the unit using his exact values for the timing circuits and was
amazed
>at the results - quiet and smooth operation and absolutely NO hot
switching.
>I tested the unit using a multiple channel, 4 trace, scope. I used the
key
>closure as the primary trigger and viewed the timing of the exciter and
output
>relays. Here are the results.
>
>I found that with his *optional* make delay circuit, 1k-ohm resistor &
1ufd cap
>across the exciter reed relay (Kenwood replacement) closed about 0.8 ms

>(800 usecs.) after the RJ1A Vacuum relay did. When going from transmit
to
>receive the vacuum relay stayed closed for about 1.2ms (1200 usecs)
after the
>exciter relay opened.
>
>The one thing I did differently was, to use a readily available 42VDC
power source
>for the relays instead of the 80-120VDC source he calls for. The use
of a
>higher than normal relay voltage (with current limiting) is a common
relay
>"speed-up" technique. Instead of seeing 80ma of current being drawn by
the
>relays upon closure I see somewhere around 70ma - no big whoop.
>
>As for the opto-electronic bias switching, it too is smooth and on the
air
>reports confirm that it sounds very clean, unlike common commercial EBS
circuits.
>
>The bias voltage selection is done with an 11 position switch which I
found in the
>proverbial junk box. Instead of using silicon diodes, as called for in
the
>article, I had a bunch of 3.3V, 5 watt, zeners I put into service. I
have 12 in
>series which provides about 40V of bias at the maximum voltage I run on
my
>amplifier. The tubes are 4-400s (3 in GG) and with 4KV resting voltage
on the
>plates the idling current is about 80 ma. When I run the amp at
reduced power
>and drop the operating voltage to 2.5KV, I can readily adjust the
idling current
>back to a nominal 80-100 ma. by adjusting the bias switch.
>
>All in all, Mr. Measure's recommendations and earlier articles have
been of
>great value and inspiration to me in my amp building projects.
>
> 73 & Happy building,
>
> Walt Kornienko - K2WK
> waltk@pica.army.mil
>
>P.S. If you are interested I know of a source for RJ1A relays at a
reasonable
>cost. Email me directly and I'll give you the poop.
>

Excellent advice from Walt... I also have an SB-1000 (non-QSK) and would like to dispel the rumor that you can't use a non-QSK amp on Amtor or Pactor. I've been using it for over a year with perfect results. Granted, the relay klunking takes some getting used to. Almost had heart failure the first time I used it, but it survived and so did I. The SB-1000 leaves the HV on all the time, so you're only switching the bias on and off, and the antenna, of course. CW is a different matter. There you do need real QSK.

73 es gl
Bill Turner, W7LZP
wrt@eskimo.com

679. Re: QSK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 15:20:27 UTC
From: rdewan@casbah.acns.nwu.edu
Message-ID: <2mpmnr$pgr@news.acns.nwu.edu>
Source record: 118219

In article <9403221804.aa02374@COR5.PICA.ARMY.MIL>,
<Waltk@pica.army.mil> wrote:
>
>P.S. If you are interested I know of a source for RJ1A relays at a reasonable
>cost. Email me directly and I'll give you the poop.
>

Last year at Dayton I bought a bunch for $22 each. The guy who sells it
is a Dayton regular. I do not have his card, but he has an unmatched selection
of tubes, sockets, chimneys, doorknobs, relays, fiberglass parts etc.
Although, I do not have his name/call with me, you will know you have reached
the right person when you see his flea market stand.

CU in Dayton.

Regards,

Rajiv
aa9ch
r-dewan@nwu.edu

680. Info wanted: ICOM IC2A 2m HT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-23 15:40:29 UTC
From: ed@fore.com
Message-ID: <Cn4JJH.1wv@fore.com>
Source record: 118220

I recently Purchased an ICOM IC2A 2meter Handi Talkey at a hamfest.
The orig synthesized HT with the thumbwheels on top for freq selection.
I Have heard that these were built like tanks, very rugged and easily fixable
if they break.

I am interested in general info: Output power, current drain, details of
external speaker & mike jacks, Schematic / service manual, power requirements,
do's & dont's to do with the rig...

The unit has a 120v base charger for nicad packs.
I got 1 small Nicad pack that works in the base charger and has
a coaxial plug at the top of it to accept vehicle power to power radio
& recharge nicads (I have tried this)

I got 2 extra battery packs for nicads/alkaline AA batts but they will only
charge in the base charger. They have no provision for external power to
charge / override the batts. Is there a circuit that can replace the batts
and provide external power directly to the rig.

Will this unit work better at 12.5v than it does at 8.5v? Will it smoke at
13.8v?

Any and all info would be appreciated.

Thanks.

Ed Bathgate

Send replys to Ed@fore.com

681. Re: What is third order intercept ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 07:57:09 UTC
From: blair@mksol.dseg.ti.com
Message-ID: <1994Mar24.075709.10079@mksol.dseg.ti.com>
Source record: 118221

Ronald Viegelahn (ron@etch-eshop.Berkeley.EDU) wrote:

: Hi,

: I keep hearing the term " third order intercept " when speaking
: of frontend intermod problems.

To further enhance your confusion... The voltage out vs voltage
in 'transfer curve' can be modelled fairly well with a power
series:
Vout=A1*Vin + A2*Vin^2 + A3*Vin^3+...
Ideally, A2,A3,A4,... = 0 and A1 is just the gain. But in
reality A3 is large enough that if you input 2 tones they
will beat against eachother and you'll wind up with 4 tones.
If you dig out a table of trig identities and substitute
V1*cos(2Pi*f1*t)+V2*cos(2Pi*f2*t) in for Vin you'll
see the terms 2*f1-f2 and 2*f2-f1 fall out. Other tones
fall out too, like the 3rd harmonics, but these are usually
out of band. If V1 & V2 are large enough the 5th order
terms 3f1-2f2 & 3f2-2f1 will pop up too and you'll have
2 more spurs show up. Usually the even order
terms are insignificant since most linearities are symmetric
and the spurs they produce fall out of band.
3rd order 2 tone spurs usually are the limiting factor in dynamic
range calculations and are the bane of RF engineers.
spuriously,
Art.

682. advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 08:26:02 UTC
From: acotton@cs.uct.ac.za
Message-ID: <2mriqq$a0l@cs.uct.ac.za>
Source record: 118222

Hi Everyone.

I'm looking for advice from someone knowledgable in radio and electronics.
A normal f.m radio recieves up to about 108 Mhz.
Does anyone know how to adjust it to recieve from 108 to about 130 Mhz?
These are the aircraft frequencies and it'd be cool to listen in. I've
heard that it's quite a simple operation involving a small adjustment in
any cheap f.m reciever.
Any advice is very welcome. Remember I'm a very non-specialist audience
here, so please keep it simple.
I'd appreciate mail in this regard.
Thanks-

-- Ari Cotton.

683. Component Databooks ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 10:34:38 UTC
From: J.Pelt@spt.fi
Message-ID: <2mrqbu$646@network.cc.jyu.fi>
Source record: 118223

HI !

I got recently a databook (Motorola.exe). And I think
that it is really good. Would somebody tell me
if there is other databooks in "computer format"
available from other manufacturers ??
Is there FTP server somewhere, where i can get those files ?

Thank you es 73 !

____
Jukka Peltomaki J.Pelt@spt.fi
Kaskenmaentie 139 HAM RADIO: OH1NVL
38770 LOHIKKO
Finland, Europe

684. Re: advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 13:35:41 UTC
From: wrt@eskimo.com
Message-ID: <Cn68Fp.8vo@eskimo.com>
Source record: 118224

In article <2mriqq$a0l@cs.uct.ac.za>, A Cotton <acotton@cs.uct.ac.za>
wrote:
>Hi Everyone.
>
>I'm looking for advice from someone knowledgable in radio and
electronics.
>A normal f.m radio recieves up to about 108 Mhz.
>Does anyone know how to adjust it to recieve from 108 to about 130 Mhz?
>These are the aircraft frequencies and it'd be cool to listen in. I've
>heard that it's quite a simple operation involving a small adjustment
in
>any cheap f.m reciever.
>Any advice is very welcome. Remember I'm a very non-specialist audience
>here, so please keep it simple.
>I'd appreciate mail in this regard.
> Thanks-
>
>-- Ari Cotton.
>
>

Well, adjusting the frequency upward is fairly easy, but the
catch is that aircraft communication is done on AM, not FM.
Still, you could add a simple diode detector to the output
of the last i.f. transformer and go from there. To adjust the
frequency upward, probably the easiest way is to find the coils
for the RF amplifier and oscillator and spread the turns out
a ways. Another problem is that the bandwidth of the i.f.
for regular commercial FM is about 100 khz - what you need for
AM is only about 6-10 khz or so. What this means is that you'll
be hearing several stations at once.

The best solution would be to get a radio made for aircraft, but
tinkering is fun too!

Good luck...
Bill Turner, W7LZP
wrt@eskimo.com

685. Re: QSKing an AMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 15:33:39 UTC
From: "William P. Osborne" <wosborne@nmsu.edu>
Message-ID: <18309.wosborne@nmsu.edu>
Source record: 118225

On Fri, 18 Mar 1994 20:02:00 GMT, Kenneth L Florence wrote:

>Hi all, I hv a Heath SB1000 (Ameritron AL80A), that I wud like to add QSK to.
>ALl the QSK kits are a bit expensive for my taste, but I was wondering. Is it
>just the speed of the internal relay that keeps this thing from being QSK? Afterreading
Richard Measure's (SP?) article in QST, if I just replace the internal
>relay with a high speed vacum relay (Jennings) will I be able to run it in QSK
>or are there other restraints. Tnks for any help you can give.
>
>DE KA3PLS
You can qsk with the jennings relays but you need some control circuits to
prevent hot switching. If you find a diagram of an old alpha 77 that is
exactly the scheme they used. 73 Bill AA5ZQ

686. Re: Kenwood (TS-850) Computer Interface Info Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 15:59:47 UTC
From: wrb@ccsitn.cb.att.com
Message-ID: <Cn6F3o.ExB@nntpa.cb.att.com>
Source record: 118226
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <hawley.764522745@aries>,
Chuck Hawley <hawley@aries.scs.uiuc.edu> wrote:
>adam@panix.com (Adam Epstein) writes:
>
>
>> A friend is interested in getting details about the computer
>>interface "box" used with the Kenwood TS-850. Has anybody built one
>>for themselves (rather than buying Kenwood's)? Does anybody have
>>schematics? I'm sure that recommendations of commercially available
>>software and other hints and kinks would be appreciated as well.
>>Email to me (adam@panix.com) and I'll forward your replies.
>
>> -Thanx
>> -Adam (N2DHH)
>The box is just opto isolators on the signal lines driven by and driving
>ttl to line driver level converters (5v to +/-10v). Look thru QST for an
>article.....it'll probably cost about the same if you do it right.
>Chuck Hawley KE9UW.
>

Check out my article in Feb. 93 QST "Everything You Always Wanted To Know About Computer-Controlling Modern Radios" (I didn't pick the title :). It has plans for a Kenwood interface that is opto-isolated and implements the handshaking lines as well as the data for complete compatibility.

I also still offer the parts kits listed at the end of the article. Prices are the same, ($47 for Kenwood kit, $44 for Icom/Yaesu/Ten-Tec) but the address is now:

CW Technology
7328 Timbercreek Court
Reynoldsburg, OH 43068-1181

COD Orders Only (add $5) at 800-547-7479

The kits include PCB and all board mounted parts. You provide case and 8-15V supply.

NOTE: ARRL has the PCB layouts and the parts are readily available - you do not have to buy anything from me.

E-mail if you need more info

--
Wally Blackburn Clinton-Gore - Socialist Leadership
wrb@ccsitn.cb.att.com for the 90s!

Amateur Radio Station AA8DX I'm the NRA.
More people have died in Ted Kennedy's car than from my gun!

687. Parobolic microphone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 16:56:07 UTC
From: dave@netmanage.com
Message-ID: <1994Mar24.175735.24053@netman-gate.netmanage.com>
Source record: 118227
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

To all informed on the subject:

Could anyone tell me how to build, or where I might purchase a parabolic microphone? How sensitive are they? Can they pick up voice signals vibrating off of glass?

Please post response to these forums or email me drectly at Dave@netmanage.com

thanks,

PS: If this question doesn't fit the forum, I would appreciate someone telling me and perhaps pointing me in the right direction for finding the appropriate forum/newsgroup.

688. Re: Simple Tx/Rx?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-24 18:03:21 UTC
From: jdc@cci.com
Message-ID: <Cn6KtM.LBJ@sunsrvr6.cci.com>
Source record: 118228

Greg Segallis (gsegalli@ic1d.harris.com) wrote:
: I want to build an RF remote shutter release for a camera.
: I need a max range of about 50' and
: it would be nice to have the receiver fairly insensitive to
: unwanted noise.

: I have seen several designs for simple transmitters (CW, tone
: transmitters, etc.) They are simple (just a few parts, with
: coils I can wind myself), small and cheap to build. They seem
: to have adequate power for this application.

: What I havn't seen is a simple receiver circuit.

If you only need one (as opposed to manufacturing thousands), try a radio-controlled car transmitter/receiver/servo. I use one for kite aireal photography, and it works well. You only need one servo, so a 2-channel radio is more than enough. Look for ads in RC car/airplane magazines. Or better yet, buy a used RC car, and head down to the local hobby store for one extra servo. The extra servo goes on the camera, and you can move the receiver between the car and camera. Twice the fun for your money...

Jim

689. Noise figure/transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 06:37:16 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar25.143716.1@ntuvax.ntu.ac.sg>
Source record: 118229
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

Here's a design question. I am looking at the front-end RF amp
which uses a 2N3904 and asking myself if I were to replace this with a
transistor with a lower noise figure, say a 2N5179 or BF689, will I see
any improvement? Is this mod worth pursuing? How much improvement can I
expect to see here?

Tks.

Daniel

690. V/UHF VSWR meter. Design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 12:21:59 UTC
From: elendir@enst.fr
Message-ID: <2mul17$j4k@cismsun.univ-lyon1.fr>
Source record: 118230

Hello !

I have recently bought an antenna for my TH-78E and I should adjust its length to get the lowest SWR. However, I have no VHF VSWR-meter, and I guess that "standard" HF SWRmeters cannot be used. Does anybody have any suggestion regarding the making of such a device. I guess it's not complex, but I can't figure out where lies the difference between V/U- and HF SWR meters.

Thanks and 73 !
Vince (17.5 weeks and waiting :( )

691. Re: Parobolic microphone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 12:54:52 UTC
From: cmh@eng.cam.ac.uk
Message-ID: <2mumus$giv@lyra.csx.cam.ac.uk>
Source record: 118231
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

dave@netmanage.com writes:

>To all informed on the subject:

>Could anyone tell me how to build, or where I might purchase a parabolic
>microphone? How sensitive are they? Can they pick up voice signals vibrating
>off of glass?

An umbrella, a can of polyurethane varnish and a bit of ingenuity should
be a good start. Apply many coats of varnish to the umbrella to make it
a bit more reflective to sound, and fix a micrphone to the shaft at about
the focus. Of course this may not work at all.

Basically, the reflector will have no effect on sound of wavelength on the
order of its diameter or greater. Thus an umbrella might be expected to have
some effect down to, maybe, 500Hz. This is just about OK for intelligible
speech. However, the fabric will not be sufficiently reflective unless
treated - it basically needs to end up with a smooth, hard, rigid surface.

As for the choice of microphone, I suggest a shotgun of the type used for
ENG and interview work, with a good windshield, and roll of as much as
possible below 300Hz.

For twenty quid more than the price of the microphone this has got to be
worth a try. I have no idea whether it will be suitable for your applica-
tion as you don't give any details - like RANGE, for example...

Christopher
--
==
Christopher Hicks | It certainly isn't above-board in the shop (5,3,7)
cmh@eng.cam.ac.uk |
==

692. RF VHF/UHF Preamp Design Params.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 15:44:26 UTC
From: boley.d%wec@dialcom.tymnet.com
Message-ID: <boley.d-250394114011@129.228.248.65>
Source record: 118232

If you read articles on the construction of RF preamps they
spen words on bypassing & shielding and claims of gain and
noise figures. What they do not say is what contributes
to these claims. Is it the tap point on a coil, a bias resistor,
obviously the device, or is it some arcane combination.

The ARRL Handbook has several preamps for home construction.
The text mentions several transistors and some coil variations.
It never explains how to "tune" the peramp for best gain and/or
noise figure and the relationship to the various active devices.

I would like to build a basic preamp and start "playing around".
However, I would like to have some reasonable expectations on
what to play with and what to expect. Any source for info in'this area ??

--
Regards,
Dick Boley N3HKN Pittsburgh

693. ATV transmitter components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 16:41:34 UTC
From: hersman@iri.tudelft.nl
Message-ID: <1994Mar25.164134.1@iri.tudelft.nl>
Source record: 118233

Hello ,

Recently in Holland a magazine published an ATV transmitter, designed
by G4WIM .
The problem is that some components are'nt available in holland,
the
MC145151P2 (Motorola) and
M67715 (Mutsubishi).

Maybe someone knows how to get these components ?
Please email and thanks in advance.

Addy Hersman
hersman@iri.tudelft.nl

694. Re: Converting CB to 10 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-25 21:40:01 UTC
From: jfw@ksr.com
Message-ID: <2mvlnh$8mu@hopscotch.ksr.com>
Source record: 118234
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

jherman@uhunix3.uhcc.Hawaii.Edu (Jeffrey Herman) writes:
>In article <WAF.94Mar21163356@sunfish.zk3.dec.com> waf@sunfish.zk3.dec.com (William Freeman USG) writes:
>> Note that it's probably not worth converting a CB to 10m
>>*unless* the CB is an SSB model.

>Not True! Keying the driver stage and adding an simple BFO to the receiver
>would give you a neat CW xcvr.

A mighty poor one, though. First, an AM detector usually makes a lousy
product detector (hey even if it's just beeps, it should sound good); second,
you have a 6Kc bandpass instead of 3Kc, for twice the noise.

695. Build own Solid-State linear?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 02:02:10 UTC
From: gene@uicsl.csl.uiuc.edu
Message-ID: <2n0532INNmuf@roundup.crhc.uiuc.edu>
Source record: 118235

I'm seriously thinking of building a high-power solid-state linear with
10 Power MosFets....serious enough that I have just ordered ten BUZ-76A
MosFets from Computer-Component-Source, Inc...1-800-356-1227...at $3.99 ea.
They are 400 volt, 3A (9A peak), 40W units....I only have specs on the
"76"...I hope the "76A" doesn't add any undesireable spec. Input cap=420pf
output cap=60pf, reverse cap=25pf, TO-220AB case, etc. I'm hoping to keep
it as simple as possible. Someone please warn me if I'm too naiive, but
I'm considering using them in push-pull, parallel...five vs five. Even
if the input capacitance is swamped with as low as 10 ohms from each section
to ground (RF ground, because a little forward bias is required), only 20W
would be required to drive them to saturation (10vrms across either 10 ohm
to each of the push-pull inputs). This push-pull drive is easily obtained
by passing the output of the single-ended transceiver, thru a choke-balun
which converts the unbalanced transceiver to a balanced push-pull to the
MosFets. I'm thinking of using a center-tapped plug-in inductor for the
push-pull output from the drains....160, 80, 40meters. Even on 40 M the
capacitive reactance would net about 150 ohms across the tank-coil so that
a Q of 10 or 12 would yield a Z of about 1K or 2K which sounds reasonable
to me (could use some tips calculating this.....I plan to full-wave rectify
my household 230 volts...115-0-115 providing a very stiff 160 volt, 10 amp
supply, to apply to the center-tap of the output coil.....probably using
a small parallel-resonant "trap", one for each band..probably #16 wire for
heavy average currents...to keep thed RF from the 160v power supply.
Another choke-type balun on the output drains to convert push-pull back
to unbalanced, followed by any pi or L-matching networt required to match
the 50 ohm antenna, or provide extra harmonic filtering.
Plan to bias MosFets in class AB for minimum cross-over distortion.
I would hope to not have stability (self-oscillation) problems on these
low-frequency bands...perhaps a small amount of "cross-neutralization"
would be useful..the circuit could accommodate that very easily.
One motivation for wanting a solid state linear, even though I have a
600W vacuum tube model now, is that in many group situation QSO's you find
that your linear is in standby for most of the time over a several-hour
period, but actual transmitting may be on a very few minutes.
--

UUCP: {att,iuvax,uunet}!uiucuxc!uicsl!gene
Internet, BITNET: gene@uicsl.csl.uiuc.edu

696. Re: Noise figure/transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 03:54:32 UTC
From: wrt@eskimo.com
Message-ID: <Cn96v6.8pD@eskimo.com>
Source record: 118236
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Mar25.143716.1@ntuvax.ntu.ac.sg>,
<asirene@ntuvax.ntu.ac.sg> wrote:
>Hi,
>
> Here's a design question. I am looking at the front-end RF amp
>which uses a 2N3904 and asking myself if I were to replace this with a
>transistor with a lower noise figure, say a 2N5179 or BF689, will I see
>any improvement? Is this mod worth pursuing? How much improvement can I
>expect to see here?
>
> Tks.
>
>Daniel
>

In general, low noise transistors have the most beneficial effect at higher frequencies. If your RF amp is working at about 10 MHz or less, you probably won't notice much improvement. Above that, a simple test is to listen to the noise with the antenna connected, but no signal present. Disconnect the antenna and see if the noise drops. If it does, then the limiting factor is the noise from the antenna, and not the noise generated in the front end transistor. If it DOESN'T drop, then a lower-noise transistor is called for.

You can get real fancy with noise figure measurements if you want, but for ordinary ham purposes, this test will tell you what you want to know.

697. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 04:01:50 UTC
From: mullins@vfofs.enet.DEc.COM
Message-ID: <9403260401.AA01651@enet-gw.pa.dec.com>
Source record: 118237

ADD ham-homebrew

698. G4WIM TV transmitter components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 07:40:24 UTC
From: andy@acronym.co.UK
Message-ID: <199403260740.HAA19979@spitfire.acronym.co.uk>
Source record: 118238

The components you need

> MC145151P2 (Motorola) and
> M67715 (Mutsubishi).

are available from Mainline Electronics in England, France and Luxembourg.
Their contact details are:

England:
Mainline Electronics
Manor Court
The Ford, off Little Glen Road
Glen Parva
Leicester LE2 9TL
England
tel: +44 533 780891/777648
fax: +44 533 477551
France:
Mainline Electronics
2 Chemin Du Bois Roux
69300 Caluire
France
tel: +33 78 23 41 44
Luxembourg:
Le Radio Amateur
20 Route De Burange
L-3429 Dudelange
Luxembourg
tel: +352 518806

The english prices are MC145151 - 11.90 pds and M67715 - 59.95 pds.

Alternatively, you could contact the author. His address is:

Tim Forrester, G4WIM
24 Corran Close
Dallington
Northampton NN5 7AL
England
tel: 0604 757401

--
Andy Rutter, g8hck

699. Re: Antenna Tuner Project Advice Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 13:51:03 UTC
From: jimn0oct@aol.com
Message-ID: <2n1ek7$hid@search01.news.aol.com>
Source record: 118239

In article <CKDosF.551@iat.holonet.net>, rohrwerk@orac.holonet.net (John Seboldt) writes:

LOOKing for winter ATU project?

I have had excellent results with my SPC transmatch from ARRL handbooks. A very interesting design was in Oct '92 (I think) 73 mag that was essentially a low pass filter: two floating variable inductors with a variable cap to ground. Good luck!

JimN0OCT

700. Re: Component Databooks ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 13:57:03 UTC
From: jimn0oct@aol.com
Message-ID: <2n1evf$hkc@search01.news.aol.com>
Source record: 118240

In article <2mrqbu$646@network.cc.jyu.fi>, J.Pelt@spt.fi (Jukka Peltomaki) writes:

Harris (the people who make op amps) also have a software selection guide much like Motorolas.

Good luck!

jimN0OCT

701. subscribe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-26 16:56:08 UTC
From: chuck_c@VNET.IBM.COM.IBM.COM
Message-ID: <199403261659.IAA20839@ucsd.edu>
Source record: 118241

```
subscribe
subscription
```

702. clo

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-27 17:45:27 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar28.014527.1@ntuvax.ntu.ac.sg>
Source record: 118242

Hi,

COncerning the 20m receiver noise article I posted earlier, I have now determined the source of that noise to be the MC1350 IF post filter amplifier. Can anyone suggest anyway to quieten this very noisy part?

At the input transformer a 200 ohm resistor is set in parallel and at the output, a 1k in parallel with the output transformer. Both input's and outputs are in balanced configuration.

Would appreciate any advise on this MC1350 noise. Is there any other component I can use in its place which would lower the noise. It appears as a background hiss (white noise) and since it is post-IF filtering, it is quite audible and irritating though not worse than the atmospheric noise.

I am aware of atmospheric noise conditions but I ask this not because the present situation is unbearable/unusable but I'd like to IMPROVE the system as far as possible. SO regardless of whether this is going to provide any benefit in practice, I'd like to understand the theory at least, for getting rid of the noise from the MC1350. Of course I know that filtering or adding a filter helps but that does not deal with the noise source, merely cuts it out.

Tks. in advance.

73,
Daniel

703. Re: Build own Solid-State linear?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-27 17:59:29 UTC
From: gene@uicsl.csl.uiuc.edu
Message-ID: <2n4hi1INNr7i@roundup.crhc.uiuc.edu>
Source record: 118243

A correction to output-Z mentioned above...someone correct me if I'm way
off on this corrected output-Z estimate: from a typical family of curves
suggested for the BUZ-76, it appears that the Drain voltage would swing
between 160v and 5v, with a peak current of about 11 amps for a peak
power input of 1760 watts. According to an example I saw in an old "Radio
Handbook" showing an example of two 811A's for push-pull audio...this
155v/11a =14 ohms gets multiplied by four (2:1 voltage gets squared to
4:1 impedance)..yielding an output-Z of 56 ohms! Does this seem to be
a valid estimate? If so, a the simple choke-balun will convert this from
balanced 56 ohms (drain-to-drain), to unbalanced 56 ohms (coax to antenna).
Some additional harmonic filtering might be desireable, but if you are
using a compact Hi-Q loop, this is probably not necesary. On 160 meters,
it appears that the D-D capacitance would be about .013 ufd (Xc of 6 ohms)
for a Q of 10. This needs to be high-current....I have 13 .001 ufd micas
in parallel that I plan to use. The small uH inductor should probably be
1/4" copper tubing.
Any informed suggestions or criticisms would be suggested before I
invest too much time into an ill-conceived project! I plan to mount the
MosFet Drains directly to two separate large heat-sinks...elevated to carry
the 160v supply voltage. Hi-current blocking capacitors would be required
to isolate the 160v from the antenna output, BUT, I WONDER if #12 electrical
wire inserted inside the 1/4" copper-tubing inductor would couple out the
power suitably, avoiding the need for D.C. blocking??? Any opinions?
--

UUCP: {att,iuvax,uunet}!uiucuxc!uicsl!gene
Internet, BITNET: gene@uicsl.csl.uiuc.edu

704. Subscribe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 02:14:36 UTC
From: vferme@io.ORG
Message-ID: <199403280214.VAA13171@r-node.io.org>
Source record: 118244

Vincent Ferme, Toronto, Ontario, Canada.

705. IC 2A

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 14:04:00 UTC
From: HICKS.ALAN@epamail.epa.GOV
Message-ID: <01HAI2TP4OMQ8X30NS@mr.rtpnc.epa.gov>
Source record: 118245

Hi, Ed - I've got an IC 2AT - same radio, but with the touch-tone pad option. If you'ld like a copy of the owners manual and a schematic, I can put one together for you. The BEST way to power the rig externally from 12-14 vdc is an adaptor called the DC-1, I believe, which converts 12-14 vdc to about 9.6 VDC and runs the transmitter at about 1.5 to 2 watts. The maximum safe voltage for the unit appears to be about 10 volts - I think the BP-5 (a high-power drop-in charge power pack from ICOM) is maybe 10.8 volts. Twelve volts or higher applied directly to the battery input terminals will probably smoke the radio, so don't do it. If you can't find the stock DC adapter, you can build one from an old BP-2 or BP-3 battery pack by wiring in a simple voltage regulator circuit and a protective fuse. Make sure you get a 10V regulator - they're a little rarer than than the usual 12 v ones.

One of my favorite replacement battery packs for the 2A is a Delcom pack available from TNR, W&W and other battery stores. This pack holds 8 standard AA NiCds and has the built-in charging circuitry similar to that in the ICOM's own BP-3 type batteries. You can keep a spare set of charged NiCds and snap them in when the first set runs down. The price with A set of AA's is around $27. It's a little more fragile than an ICOM-built pack, but it lasts a long time on a charge. I hope this helps. Let me know if you need the manual and schematics. 73 de KD1DJ, Alan.

706. Identification of double balanced diode mixer - help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 14:53:56 UTC
From: epacyna@auratek.COM
Message-ID: <1223@auratek.COM>
Source record: 118246

Could anyone help with specifications and pin out for a double balanced diode mixer with the following markings "R&K M18"? Case also stamped, made in Japan.

Reply to ed@auratek.com

Thanks in advance.

ed

707. Re: Microwave Filter Help Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 15:31:56 UTC
From: zlau@arrl.org
Message-ID: <1994Mar28.153156.7106@arrl.org>
Source record: 118247

Steve Muther (stevem@w6yx.stanford.edu) wrote:

: I am building an FM video microwave link to connect two ATV
: repeaters in the SF bay area and I'm looking for help with a
: bandpass filter design.

: The filter needs to be about 20 MHz wide centered at 5910 MHz
: and the low side skirt needs to be at least 30dB down at
: the LO frequency of 5840 MHz. (to clean up residual LO from
: the PA and previous filter)

: In the interest of low loss and simplicity, I would like to
: implement the design in waveguide. I have a large section
: of WR-137 which is common in this band.

: I have seen designs, like the one I am interested in, for 10 GHz
: in the RSGB VHF/UHF manual and the ARRL microwave experimenters
: manual. Does anyone know of cookbook filter tables for filters
: of this type? As a last resort, does anyone know the process
: for scaling down the 10GHz versions?

Volume 2 of the Microwave Hanbook by the RSGB might have
what you want. Problem is, they describe iris coupled filters,
which I find harder to build than post coupled filters. Though,
if you want to use up little pieces of waveguide, I've found that
you can indeed use them up making an iris coupled filter.

A useful reference appeared in the 1948 Bell System Technical
Journal by W.W. Mumford Maximally-flat Filters in Waveguide
p.684- I recall it had a pretty good explanation of what is
going on--but its been 7 years since I studied it...
I'd venture to say that someone who fully understood the
math in this article would be able to scale 10 GHz versions.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

708. Digital Frequency Synthesizer QST 4/84 & 2/85

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 15:33:08 UTC
From: bsn@calvin.ph.utexas.edu
Message-ID: <2n6tbk$58v@geraldo.cc.utexas.edu>
Source record: 118248

There was a very interesting direct digital frequency synthesizer
described in QST for April 1984 and February 1985.

I would like to obtain a copy of the PROM listing for the synthesizer
unit. I am also interested in the assemply code for the controller but
that is not as nesessary as the PROM listing.

The synthesizer used a TRW D/A converter, TDC106J-8 (TDC106B7C8 in the
processor controlled version). If anyone knows if this device still available
or if their is an equivalent that is, please let me know.

Tnx es 73,
Barry Newberger W5KH

709. KK7B R1/R2: Applied Radio Science?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 15:49:42 UTC
From: cph@zurich.ai.mit.edu
Message-ID: <CPH.94Mar28154942@kleph.ai.mit.edu>
Source record: 118253

I recently sent mail the Applied Radio Science, the supplier for the R1 and R2 PC boards; my mail was returned as undeliverable. Does anyone know what happened? I double-checked the address with the address published in QST and it was correct.

Also, does anyone know if Rick Campbell KK7B has an internet email address?

Chris K8SH

710. How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 16:17:40 UTC
From: trier@slc6.ins.cwru.edu
Message-ID: <2n6vv4$p5n@usenet.INS.CWRU.Edu>
Source record: 118249

What are the reasonable ways to do binary phase shift keying demodulation for amateur radio? A pointer to a reference on it would be fine. I've found lots of statements that it can be done, but nothing detailed about how to do it.

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quois."
Home: sct@po.cwru.edu - Peter Schickele

711. clo

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 18:08:00 UTC
From: bob.albert@ledge.com
Message-ID: <cf.411.437.0N2EE5E8@ledge.com>
Source record: 118250

Try replacing the MC3150; maybe you just have a noisy one. Or talk
to Motorola about it..

73 DE K6DDX

712. Re: Digital Frequency Synthesizer QST 4/84 & 2/85

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 18:44:51 UTC
From: zlau@arrl.org
Message-ID: <1994Mar28.184451.1217@arrl.org>
Source record: 118251

bsn@calvin.ph.utexas.edu wrote:
: There was a very interesting direct digital frequency synthesizer
: described in QST for April 1984 and February 1985.

: I would like to obtain a copy of the PROM listing for the synthesizer
: unit. I am also interested in the assemply code for the controller but
: that is not as nesessary as the PROM listing.

The information on obtaining paper copies of this in a footnote
at the end of the article.

: The synthesizer used a TRW D/A converter, TDC106J-8 (TDC106B7C8 in the
: processor controlled version). If anyone knows if this device still available
: or if their is an equivalent that is, please let me know.

This is still available from A and A Engineering.

A difficulty with this project is that the spectral output probably
isn't acceptable for anything but the most casual receivers--spurs are
in the -55 to -60 dBc range. Newer chips do better, but still aren't
good enough for high performance receivers unless you are willing to
filter the output with a tracking filter. A well designed PLL is
commonly used as a tracking filter.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

713. How to receive FM subcarrier signals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-28 22:50:23 UTC
From: kmartin@prism.gatech.edu
Message-ID: <2n7mvf$9q3@acme.gatech.edu>
Source record: 118252

What does one need for receiving FM subcarrier signals?

Any information or suggestions will be appreciated.

--
Kevin Martin
Georgia Institute of Technology, Atlanta Georgia, 30332
uucp: ...!{decvax,hplabs,ncar,purdue,rutgers}!gatech!prism!kmartin
Internet: kmartin@prism.gatech.edu

714. B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 00:49:57 UTC
From: brucerob@epas.utoronto.ca
Message-ID: <2n7tvl$fok@alpha.epas.utoronto.ca>
Source record: 118254

I'm having a heck of a time finding a transformer to supply B+ voltage
for qrp tube projects. The local surplus store has, however, many low
voltage secondary transformers. Is is at all possible to use one of
these with the primary and secondary reversed, provided that the ratio
and power handling characteristics were correct? For example, using a
120v -> 40v transformer the other way 'round to produce 120v -> 400v.
Just an idea,
73, Bruce

--

Bruce G. Robertson internet: brucerob@epas.utoronto.ca
Dept of Classics Satius est enim otiosum esse quam nihil agere.
University of Toronto It's more fun to relax than it is to do nothing

715. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 05:25:53 UTC
From: wrt@eskimo.com
Message-ID: <CnEv3r.662@eskimo.com>
Source record: 118255

In article <2n7tvl$fok@alpha.epas.utoronto.ca>,
Bruce Robertson <brucerob@epas.utoronto.ca> wrote:
>I'm having a heck of a time finding a transformer to supply B+ voltage
>for qrp tube projects. The local surplus store has, however, many low
>voltage secondary transformers. Is is at all possible to use one of
>these with the primary and secondary reversed, provided that the ratio
>and power handling characteristics were correct? For example, using a
>120v -> 40v transformer the other way 'round to produce 120v -> 400v.
>Just an idea,
>73, Bruce
>

It might work for a while, but you're putting 120 volts on a winding
designed for 40, and 400 volts on a winding designed for 120. Not good.
A good source of cheap but good transformers is Fair Radio Sales in
Lima, OH. I don't have their # handy, but information will. They will
send you a great catalog - all kinds of surplus goodies.

If you're willing to do some scrounging, a transformer from an old
tube-type color TV would do the job, too. They were built for
continuous use and in my 18 years in the TV service biz, I never saw one
fail - quite a remarkable record! They come in two flavors: bridge
rectifier output and voltage-doubler output. Either one will give you
about 400 volts DC at about (I'm guessing here) 200-250 ma, plus the
voltage-doubler kind can be used with a bridge to give you half the
voltage at twice the current.

73 es gl

Bill, W7LZP

716. Semiconductor specs and equivalencies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 05:29:39 UTC
From: jwelch@acsu.buffalo.edu
Message-ID: <CnEv9G.K9H@acsu.buffalo.edu>
Source record: 118256

Dear Net:

This seems like the relevant area to post since it is likely to be read by both amateur and professional electronics people who work hands-on everyday with semiconductors of all sorts, if another group would be more appropriate, please email me.

Question: Is there a resource which one can consult, preferably online, to get design specifications on semiconductor components and to determine equivalencies between components for purposes of substitution?

I am familiar with semiconductor catalogs which list chips from each manufacturer, but this seems like an archaic way to go about searching. In addition to the awkwardness of thumbing through these tomes, it would seem too expensive to maintain libraries of these catalogs and keep them up to date.

I am interested only from the perspective of a hobbiest trying to maximize the utility of his junk collection. There are several projects I would like to try, but years after the projects have been written up, parts numbers change, better substitutes come out, etc.

This must be a general problem, and I apologize if it is in a faq of some sort. If this is a question of general interest, please respond via this newgroup. Otherwise, I can be contacted by email to: welch@sc3101.med.buffalo.edu

Thank you for any responses,
Sincerely,

John J. Welch

717. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 13:30:32 UTC
From: zlau@arrl.org
Message-ID: <1994Mar29.133032.4744@arrl.org>
Source record: 118257

Bruce Robertson (brucerob@epas.utoronto.ca) wrote:
: I'm having a heck of a time finding a transformer to supply B+ voltage
: for qrp tube projects. The local surplus store has, however, many low
: voltage secondary transformers. Is is at all possible to use one of
: these with the primary and secondary reversed, provided that the ratio
: and power handling characteristics were correct? For example, using a
: 120v -> 40v transformer the other way 'round to produce 120v -> 400v.
: Just an idea,
: 73, Bruce

I wouldn't recommend it--the one of the limiting factors with high voltage transformers is voltage breakdown across the insulation. However, you can run a pair of transformers back to back--say a 115 to 12V and a 12 volt to 240 volt. Hamfests are pretty good sources for cheap high voltage transformers--if you stay till the end of the event you can often get them for free :-).
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

718. Re: DMM help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 13:39:31 UTC
From: chancock@tecvax.stim.tec.tn.us
Message-ID: <1994Mar29.073931.120@tecvax.stim.tec.tn.us>
Source record: 118258

In article <2m51d8$m7t@msuinfo.cl.msu.edu>, cravitma@cps.msu.edu (Matthew B Cravit) writes:
> On 15 Mar 1994 17:21:49 GMT, strange alien beings caused Keith M. Hamilton (ak238@yfn.ysu.edu) to write:
>
>> I am going to be purchasing a DMM at dDayton this year. I would
>> like to hear from someone who has had good liuck with a certain
>> meter or perhaps someone who wishes they had bought a certain
>> meter.
>> I am a relative beginner to building and testing circuits and
>> components and I would like to buy the best meter for the
>> money.
>> Thanks in advance for your help!
>> --
>> Keith M. Hamilton 73 de NO8Z
>
> I have had a Fluke 77 for ~2 months and am quite happy with it. It is
> rock-solid durable, quite functional and easy to use. Some of the
> features I like are:
>
> * Large, easy to read display
> * Touch hold (locks measurement so you can put down probes and
> then read meter)
> * Measures ACV/DCV/DC mA/Resistance/Diode Check/Continuity
> * Good warranty
> * Lots of accessories available
>
> I paid about $150 for my 77, you will probably (especially at Dayton)
> be able to find one for less.
>
> If you want more info about the meter, drop me a note.
>
>
> 73 DE N9VWG
>
> /Matthew
>
> --
> Matthew Cravit, N9VWG | All opinions expressed here are

I have had a FLUKE 77 for about 9 years now and has survived a lot of abuse.
I was working at this institute as a lab technician and used it for classes and
work for about 5 years and only had to change the battery twice (left it on).
One guy borrowed it and tried testing current from the wall socket by plugging

the leads in with out a test circuit. It melted the tips off of the probes but did no damage to the meter except blow the fuse. It is one rugged meter and I will never consider another one as long as it is going. (which seems to be forever).

Clay Hancock
KD4VXN

719. Re: Microwave Filter Help Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 14:34:05 UTC
From: josemj1@aplmail.jhuapl.edu
Message-ID: <josemj1-290394091808@joses-mac.jhuapl.edu>
Source record: 118259

In article <2n33hp$5ec@nntp2.Stanford.EDU>, stevem@w6yx.stanford.edu
(Steve Muther) wrote:
>
> I am building an FM video microwave link to connect two ATV
> repeaters in the SF bay area and I'm looking for help with a
> bandpass filter design.
>
> The filter needs to be about 20 MHz wide centered at 5910 MHz
> and the low side skirt needs to be at least 30dB down at
> the LO frequency of 5840 MHz. (to clean up residual LO from
> the PA and previous filter)
>
> In the interest of low loss and simplicity, I would like to
> implement the design in waveguide. I have a large section
> of WR-137 which is common in this band.
>

Steve,

I have made a number of WG filters for X band using the companion
software to ARRL's "Microwave Experimenter's Handbook". (The software
disk costs money and does not necessarily come with the book.
Consult a ham bookstore list for details). The handbook discusses
simple ways to do the machining with inexpensive hand tools.

Your requirements spec'd above are a snap for a simple inductive iris
WG filter design, and I think you will have no problem at all.
Construction is fairly simple, except that insertion loss is
affected considerably by how much flux and solder you accidentally
get inside the cavities. I have switched from simple solder sweating
to silver brazing. This requires real (98%) silver solder and
about 900 degrees F. It is nice that the boric acid flux is soluble
in hot water, though.

The program I use is called WEFILTER.BAS, the documentation for which I
have
reproduced below.
------------------ BEGIN wefilter.doc ----------------------
"WEFILTER.BAS": WAVEGUIDE FILTER DESIGN

The usual lumped-element filters are difficult to realize and tend to be
exceedingly lossy at microwave frequencies. On the other hand, waveguide
filters are relatively easy to build and are nearly lossless at microwave
frequencies. This program provides the necessary dimensions for the
construction of a waveguide filter given the desired filter response.

The program (written by M. H. Walters, G3JVL) first asks for the number of cavities, center frequency and bandwidth. The filter will have an equal-ripple response in the passband. This means that the filter passband is not flat but rather smoothly ripples from zero attenuation to some small value and back again. The number of points with zero attenuation (also called "poles") is equal to the number of cavities. The filter below is designed for 0.25-dB ripple. The bandwidth specified is the equal-ripple bandwidth. For a 0.25-dB equal-ripple filter, the equal-ripple bandwidth is defined between the points where the response falls off to 0.25 dB. Note that the 3-dB bandwidth definition (where the response falls off to 3 dB) will label a given filter with a wider bandwidth. If you can tolerate more passband ripple (say 0.5 dB), you can get more stop-band attenuation. If you don't need a lot of stop-band attenuation, then you can design a filter with less passband ripple.

If you specify a negative number for the maximum passband attenuation, the program will ignore the value of the attenuation and give you a maximally flat, or Butterworth, response. At band center, the response is as flat as possible and there is no ripple. The tradeoff is that the skirts of the filter (stop band) do not fall off as quickly and the filter response at the band edges is more rounded.

Next, you are asked for the thickness of the iris. This thickness will change the filter response slightly and is taken into account. Then the appropriate rectangular waveguide is found for constructing the filter. Next, the program prints out values for the low-pass prototype. These values (and the B(I)/Y0, the iris susceptances) are not needed for filter construction. Opposite the iris susceptances are the diameters of the iris holes. For a three-cavity filter, four irises are needed. Note the symmetry in the listing. Also, the irises should be centerd in the waveguide. Finally, the length of each cavity (distance between irises) is listed.

The final part of the program explores the filter response. While it states that stop-band attenuation is calculated, it can also be used to explore the

passband. It can be interesting to view the equal-ripple band-pass response
and to check the definition of equal-ripple bandwidth.

In constructing the filter, you may want to add tuning screws, especially if
you are designing a narrow bandwidth filter. These are best added in the
center of the wide side of each cavity.

Also, keep in mind that any filter made from transmission line is likely to
have additional band-pass responses at multiples of the center frequency. Thus
they will have difficulty stopping any harmonics.

INDUCTIVE-IRIS COUPLED WAVEGUIDE FILTER DESIGN

NUMBER OF CAVITIES ? 3

CENTER FREQUENCY (MHZ) ? 10368

BANDWIDTH (MHZ) ? 100

MAX PASSBAND ATTENUATION (RIPPLE) (DB) ? .25

IRIS THICKNESS (MM) ? .05

RECOMMEND WAVEGUIDE SIZE WG16

INTERNAL DIMENSIONS ARE:

A = .9 IN
B = .4 IN

IS THIS SIZE OK (Y/N) ? Y

THE WAVEGUIDE SELECTED IS WG16
A = .8999999 IN
B = .4 IN

PROTOTYPE ELEMENT VALUES

G(1) = 1.303439
G(2) = 1.146276
G(3) = 1.30344

IRIS DATA FOLLOWS FOR WAVEGUIDE FILTER DESCRIBED AS
3 CAVITIES
CENTER FREQUENCY = 10368 MHZ
BANDWIDTH = 100 MHZ
MAXIMUM PASSBAND ATTENUATION = .25 DB
IRIS THICKNESS = .05 MM

B(0)/Y0 = 7.042 D = 7.8 MM
B(1)/Y0 = 48.343 D = 4.37 MM
B(2)/Y0 = 48.343 D = 4.37 MM

```
B( 3 )/Y0 = 7.042 D = 7.8 MM

CAVITY LENGTHS ARE:

L( 1 ) = 1.774 CM
L( 2 ) = 1.844 CM
L( 3 ) = 1.774 CM

ENTER STOP BAND FREQ. (MHZ, NEG OR 0 TO END) = ? 10224
STOP BAND ATTENUATION = 26.51839 DB

ENTER STOP BAND FREQ. (MHZ, NEG OR 0 TO END) = ? 0
---------------------- END wefilter.doc ----------------------

Good luck,
Marshall Jose, WA3VPZ
josemj1@aplmail.jhuapl.edu
```

720. Re: Microwave Filter Help Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 15:42:50 UTC
From: glenne@sad.hp.com
Message-ID: <CnFnnG.63G@srgenprp.sr.hp.com>
Source record: 118260

FWIW, I sent Steve design data for 3 section maximully flat and
3 and 4 section .1 dB Chebychev post filters in WR-137 guide.
Filter lowpass prototypes came from the MY&J tables and the post
diameters and spacings were generated using the same coupling model
used for the 10,368 MHz, 100 MHz bw filter I showed in July 1987 QEX.

Glenn Elmore n6gn

amateur IP: glenn@SantaRosa.ampr.org
Internet: glenne@sr.hp.com

721. Re: MuRata SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 16:40:41 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Mar30.004041.1@ntuvax.ntu.ac.sg>
Source record: 118261

In article <CnAJGB.BvF@seastar.org>, jjw@seastar.org (John Welch) writes:
> As quoted from <Cn90Kw.D15@freenet.carleton.ca> by ap570@FreeNet.Carleton.CA (John Spittle):
>
>>
>>
>> MuRata CFM455J1 (2.6 KHz BW)
>> or
>> MuRata CFJ455K5 (2.4 KHz BW)
>>
>> - filters needed for QRP club transceiver project. Can anyone
>> name a supplier (in Canada or US) who carries a stock? We are
>> looking for at least 30. "Derry" VE7QK

Try

Radio West
850 Anns Way Drive,
Vista,
California 92083,
USA

Phone: (619)726-3910

Last I asked, they were EXPENSIVE!

73 es GL,
Daniel

>
> Try Digikey's TOKO HCFM2-455A filter, -6db bw of 4kHz.
> Digikey part # is TK2330, cost is $25.20 for 10, or $189 for 100.
> Digikey order number is 800-344-4539.
> I've used them before - they have slightly different shape but
> to the same job about as well as the Murata ones, and they're a *lot*
> easier to find.
> If you're using a pre-designed board and *must* have the
> Murata filter, try Penstock. I don't have their # handy, but they are
> in all the radio trade rags (RF Design, microwaves&rf, microwave
> journal, etc).
>
> --
> While (its_not_working()) John Welch, N9JZW
> mess_with_it(); jjw@seastar.org

722. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 16:48:25 UTC
From: tomb@lsid.hp.com
Message-ID: <CnFqop.8Hx@hpcvsnz.cv.hp.com>
Source record: 118262

Bruce Robertson (brucerob@epas.utoronto.ca) wrote:
: I'm having a heck of a time finding a transformer to supply B+ voltage
: for qrp tube projects. The local surplus store has, however, many low
: voltage secondary transformers. Is is at all possible to use one of
: these with the primary and secondary reversed, provided that the ratio
: and power handling characteristics were correct? For example, using a
: 120v -> 40v transformer the other way 'round to produce 120v -> 400v.
: Just an idea,

First, it would be (a bit below) 360 volts, not 400.

But the Much Bigger Problem is that the transformer would get very hot and not last long under these conditions if it had been designed reasonably for 120->40 service. You would be applying 3 times the voltage to the 40 volt winding that it was designed for. Likely you would be running the core to saturation, and the current would be quite high even with no load on the secondary. You would get very significant losses in both the core and the copper.

You can test this out if you have a Variac and a reasonable AC current meter. Apply 40 volts to the 40 volt winding, and measure the current. Run the voltage slowly up and note what happens to the current. Do this all with no load on the "secondary". If you can monitor the phase of the current, figure the power dissipated as a function of applied voltage; if you can look at its waveshape, see if it stays sinusoidal... Don't go too far, or you will destroy the transformer.

Another potential problem is insulation: the higher voltages could exceed the insulation capabilities of the transformer. You'll probably run into the core-saturation limit before this becomes a problem, but it's worth noting.

Yes, it's kinda sad that it's so hard to find medium size power transformers for tube applications. Are any old tubed TVs being junked these days? Some have power transformers.

723. Building Hi-power Solid-State Linear

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 17:50:06 UTC
From: gene@uicsl.csl.uiuc.edu
Message-ID: <2n9pofINNapv@roundup.crhc.uiuc.edu>
Source record: 118263

(This previous posting got fouled-up so I will resubmit it since it
relates to a follow-up that is currently posted):

I'm seriously thinking of building a high-power solid-state linear with
10 Power MosFets....serious enough that I have just ordered ten BUZ-76A
MosFets from Computer-Component-Source, Inc...1-800-356-1227...at $3.99 ea.
They are 400 volt, 3A (9A peak), 40W units....I only have specs on the
"76"...I hope the "76A" doesn't add any undesireable spec. Input cap=420pf
output cap=60pf, reverse cap=25pf, TO-220AB case, etc. I'm hoping to keep
it as simple as possible. Someone please warn me if I'm too naiive, but
I'm considering using them in push-pull, parallel...five vs five. Even
if the input capacitance is swamped with as low as 10 ohms from each section
to ground (RF ground, because a little forward bias is required), only 20W
would be required to drive them to saturation (10vrms across either 10 ohm
to each of the push-pull inputs). Actually, with 5 MosFets in each section, they would only
need to be driven to 2A each. This push-pull drive is easily
obtained with a 1:1 choke balun...or perhaps a 4:1 stepdown,
by passing the output of the single-ended transceiver, thru a choke-balun
which converts the unbalanced transceiver to a balanced push-pull to the
MosFets. I'm thinking of using a center-tapped plug-in inductor for the
push-pull output from the drains....160, 80, 40meters.

I plan to full-wave rectify
my household 230 volts...115-0-115 providing a very stiff 160 volt, 10 amp
supply, to apply to the center-tap of the output coil.....probably using
a small parallel-resonant "trap", one for each band..probably #16 wire for
heavy average currents...to keep the RF from the 160v power supply.
Another choke-type balun on the output drains to convert push-pull back
to unbalanced to match
the 50 ohm antenna.
Plan to bias MosFets in class AB for minimum cross-over distortion.
I would hope to not have stability (self-oscillation) problems on these
low-frequency bands...perhaps a small amount of "cross-neutralization"
would be useful..the circuit could accommodate that very easily.
One motivation for wanting a solid state linear, even though I have a
600W vacuum tube model now, is that in many group situation QSO's you find
that your linear is in standby for most of the time over a several-hour
period, but actual transmitting may be on a very few minutes.
--

UUCP: {att,iuvax,uunet}!uiucuxc!uicsl!gene
Internet, BITNET: gene@uicsl.csl.uiuc.edu

724. Re: Semiconductor specs and equivalencies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 18:37:11 UTC
From: mjsilva@ted.win.net
Message-ID: <222@ted.win.net>
Source record: 118264

In article <CnEv9G.K9H@acsu.buffalo.edu>, John J Welch (jwelch@acsu.buffalo.edu) writes:
>Dear Net:
>
>This seems like the relevant area to post since it is likely to be
>read by both amateur and professional electronics people who work hands-on
>everyday with semiconductors of all sorts, if another group would be
>more appropriate, please email me.
>
>Question: Is there a resource which one can consult, preferably online, to
>get design specifications on semiconductor components and to determine
>equivalencies between components for purposes of substitution?
>
>I am familiar with semiconductor catalogs which list chips from each
>manufacturer, but this seems like an archaic way to go about searching.
>In addition to the awkwardness of thumbing through these tomes, it would
>seem too expensive to maintain libraries of these catalogs and keep them
>up to date.
>
>I am interested only from the perspective of a hobbiest trying to maximize
>the utility of his junk collection. There are several projects I would like
>to try, but years after the projects have been written up, parts numbers
>change, better substitutes come out, etc.
>
>

I don't have any knowledge of an online source, but one very good reference for mystery parts are the NTE, ECG and SK catalogs/cross-reference guides. These guides will cross-reference just about any semi you have to an equivalent (or slightly superior) device, and you can read the thumbnail specs on that device in the guide. You soon learn some of the part numbers by heart (e.g. the NTE 123A is your basic 2N3904/PN2222/etc). These guides cost $3-$4 and are readily available. Of course, the more exotic the device the less likely it is to be listed, but for hobby purposes we're generally using more common, available devices anyway. Another point to be aware of is that the equivalent devices may have slightly better specs than the device you're looking up (higher voltage, higher gain, etc). This might get you into trouble if you cross-reference desired part AAAA to (e.g.) ECG part BBBB and find that the BBBB is also the cross for a part CCCC, which you just happen to have. The CCCC may not be as "good" as the AAAA, depending. Most of the time, though, you should be OK.

BTW, I think some of these companies now have their cross-references on disk also.

73, Mike, KK6GM

725. Ramsey kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 18:55:37 UTC
From: drumhell@claudette.nrl.navy.mil
Message-ID: <CnFwKq.AxM@ra.nrl.navy.mil>
Source record: 118265

I'm interested in getting on 440 mHz ... cheaply. So I would consider building a Ramsey kit. (They cost about $160.) Questions: How easy are they to build? Do they sell enclosures for them? How well to the radios perform? How much test equipment do I need to calibrate and tune the radio?

-Dave
--
David Drumheller, KA3QBQ phone: (202) 767-3524
Acoustics Division, Code 7140 fax: (202) 404-7732
Naval Research Laboratory
Washington, DC 20375-5350 e-mail: drumhell@claudette.nrl.navy.mil

726. Re: How to receive FM subcarrier signals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 19:54:43 UTC
From: mfraser@vanbc.wimsey.com
Message-ID: <2na123$nna@vanbc.wimsey.com>
Source record: 118266

What do u need to receive SCA? Based on my experience, you don't need a Ramsey kit, since it doesn't seem to add anything to the process. My fillings do just as well..
anyone make it work?

/mark

727. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 21:13:46 UTC
From: glusk@mechcad3.esd.sgi.com
Message-ID: <2na5ma$hke@gazette.esd.sgi.com>
Source record: 118267

A related question -

If one has a transformer without any labeling,
what is the best way to figure out how much
current it can handle at its various voltages?

If I take a transformer out of a piece of
equipment, I try to note the tube compliment
so I can add up the maximum current values from
the data in a tube handbook. However, this may
end up being a high estimate. I also have
lots of other transformers that literally came
from the trash without any manufacturer's model
numbers or other identifying data - or even any clue
what sort of equipment they came out of.

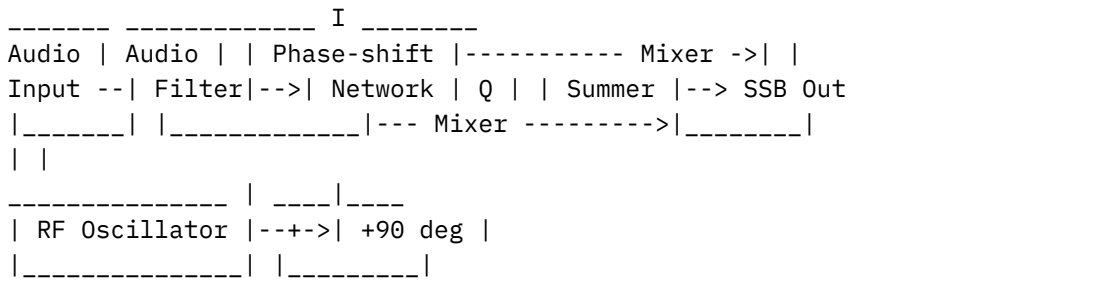
Thanks for any suggestions.

--
Mark Glusker, glusk@esd.sgi.com

728. How phasing SSB Exciters Work (Was: RF and AF speech processors)

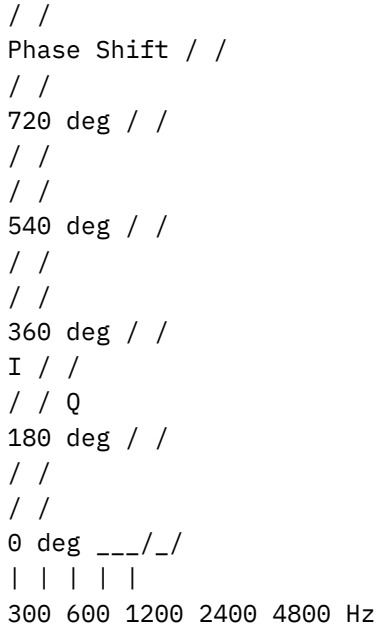
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 21:26:17 UTC
From: alanb@sr.hp.com
Message-ID: <CnG3Jt.Htw@srgenprp.sr.hp.com>
Source record: 118168
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In another thread, I claimed that phasing-type single-sideband generators sound better than filter-type generators because phasing exciters have flatter amplitude and delay response. Gary Coffman disputed that. Rather than respond to Gary's long replies in detail, I'll just summarize how phasing-type SSB exciters work:



I and Q are two audio outputs with a constant phase difference between them of 90 degrees. The input filter limits the audio frequency response to the range of the phase-shift network. The "+90 deg" box can be switched to -90 degrees to get the opposite sideband. (The output of each mixer is a DSB signal.)

The audio phase shift network is the interesting (read difficult) part of the system. It must maintain a 90 degree phase difference and excellent amplitude matching between the two outputs over something like a 10:1 frequency range (300 Hz - 3000 Hz). It generally does that by causing each of the two outputs to have a constantly-rising phase shift versus frequency characteristic, like thus:



Frequency

I may have gotten the scaling off a bit, but the principle is right:
Both channels have constantly-changing phase shifts, but the difference
is always 90 degrees. Note that the frequency scale is logarithmic.
If phase were linear with frequency, then that would equal constant
delay. Since that's not true, there is some variation in group delay
with frequency, but it is a nice smooth curve that has little affect
on audio quality. (As opposed to the crystal filter used in a filter-
type SSB generator which has "bumpy" group delay, expecially at the
high and low band edges.)

The design of the two channels' phase-shift networks is such that
any errors in linearity occur in different places. That means that
you can't make it work properly unless both channels have nice
linear phase versus log(frequency). The same goes for amplitude.
I suppose you could design a diabolical phase-shift network that
had unflat (but matched) frequency response in the two channels,
but why would you do that?

The input audio filter can also add to amplitude or delay distortion.
However, it's not hard to design the filter to minimize the problem.
You don't need the sharp cutoff of a crystal filter designed for
receiving applications because any spurious below 30 or 40 dB down
will be covered up by the transmitter power amplifier's splatter
anyway. Also, audio filters are easier to build accurately than
crystal filters because of the lower Q and lower frequency.

The conclusion: Phasing-type SSB generators have flatter group delay
and amplitude than filter-type generators. You really can hear the
difference in the on-the air signal, in my experience.

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <1994Mar26.201156.9246@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
: >SSB crystal filters are designed for steep skirts for good
: >shape factors. This means that without any equalizing networks
: >(which normally double the complexity and send the cost through
: >the roof), the phase response at the passband edges are *terrible*
: >The fact that the center frequency of the crystal filter is much
: >higher just means that the Q of the parts has to be that much
: >better. The mathematics of the phase and amplitude response
: >tradeoffs are unchanged-- the tradeoffs are identical for a
: >3 kHz audio filter and a 3 kHz SSB filter (assuming ideal
: >parts--with real parts its easier at audio...)

: Apples and oranges. The phasing SSB exciter is using an audio
: *phase shift network*, the filter exciter is using a RF filter.

I think Zack was referring to the input audio filter.

: Now the AF phasing network may be considered a sort of filter,
: but that's not it's designed purpose, and for sure it's not a
: 3 kHz bandpass response. Instead it has to maintain a constant

: 90 degree phase shift across multiple octaves. That's tougher.

But the hard part is getting the ampltude and phase matching
to within a fraction of a dB or degree. As explained above, if you
do that, the overall amplitude and delay response versus frequency
will be quite good.

AL N1AL

729. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 21:38:46 UTC
From: alanb@sr.hp.com
Message-ID: <CnG44M.I65@srgenprp.sr.hp.com>
Source record: 118169

Stephen C. Trier (trier@slc6.ins.cwru.edu) wrote:
: What are the reasonable ways to do binary phase shift keying
: demodulation for amateur radio? A pointer to a reference on it would
: be fine. I've found lots of statements that it can be done, but
: nothing detailed about how to do it.

How about this: Given that frequency is the time derivative of phase, use an FM discriminator and run the output through an integrator. You'll have to add a high-value resistor in parallel with the integrator capacitor to eliminate zero offsets. (Make the R-C time constant much greater than the maximum number of ones or zeros that you expect to get in a row.) This scheme will work as long as your data has roughly equal average numbers of ones and zeros.

AL N1AL

730. Building WWV time decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 22:04:28 UTC
From: ctimmons@asic.sc.ti.com
Message-ID: <mXQflQ.XcO@asic.sc.ti.com>
Source record: 118170

I know that WWV broadcasts the current time in a digital coded format. I would like to find information on this format. Better yet I would like to find a schematic for decoder circuit.

Any info leading me in the right direction would be helpful.

Thanks,

Clay Timmons KB5SXS e-mail: ctimmons@asic.sc.ti.com

731. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 22:16:08 UTC
From: jkaidor@synoptics.com
Message-ID: <CnG5ux.4rF@synoptics.com>
Source record: 118171

The back-to-back approach is a good one; I've used it before. Of course, you also hang your filaments across the low voltage between the two transformers. For a QRP project, you can also hang a voltage doubler off the output of the second transformer.

Another way is to do away with the transformer altogether. This can be safe if you use a single wire to the AC plug. The other wire goes to the shack ground. That way, if you plug in the unit backwards, instead of having a hot chassis, you have no power at all.

The SB-33 transceiver used a variant of this technique where they had a separate, isolated B- bus inside the rig. This was bypassed to the chassis by several disk ceramic caps. There was also a neon bulb on the back of the radio hooked up between the B-/Neutral and chassis ground. If you had the rig plugged in backwards the lamp would light, assuming that you had a shack ground. Also, a ferocious hum would appear on your signal, and the chassis would be slightly hot for AC, corresponding to the leakage through the bypass caps.

I remember seeing an article once where somebody used a transformerless power supply to power a homebrew linear. I believe it was a voltage octupler. Performance was reported to be excellent, because of the low impedance of the AC source. :-)

- Jerry Kaidor, KF6VB

Disclaimers: 1) My opinions, not SynOptics'
2) Don't try this at home unless you really really *really* know what you're doing!
3) Above information supplied for entertainment purposes only :-)
4) See (2) above.

732. Re: RF VHF/UHF Preamp Design Params.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-29 22:35:58 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994Mar29.115912.59473@ucl.ac.uk>
Source record: 118172

> If you read articles on the construction of RF preamps they
> spen words on bypassing & shielding and claims of gain and
> noise figures. What they do not say is what contributes
> to these claims. Is it the tap point on a coil, a bias resistor,
> obviously the device, or is it some arcane combination.

I'm no expert, but can think of a few things that will effect noise figure.

1) Device itself. Gate length is especially importent. Smaller the better.
2) Temperature, especially if its a HEMT. High electron mobility is helpful. The HEMT achieve this, but needs a low temp (liquid nitrogen 77K) to work well.
2) Drain (or collector)) current of device.
3) Mathing of the source (usually 50 Ohm) to the device. You normally need a mis-match, ie dont match for maximum power transfer. Data sheet give you more info. Clearly, changing coil tap positions will then alter noise figure.

Whilst expensive CAD packages are useful, few amateurs have access to them. If not, we can play around, and see what is best.

davek

PS. Whilse not a calibrated instrument, there is a design in one of the RSGB's handbooks for a piece of test equipment for tuning equipment for minimum noise figure. It basically uses a zener diode to generate noise. The source is switched on and off rapidly. The audio output of the receiver is fed into the instrument, which determines the ratio of audio output with the noise source on, to when it is off. You adjust the pre-amp, to maximise the ratio. I built one and it works well.

733. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 00:38:55 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2nahmv$9q9@hpscit.sc.hp.com>
Source record: 118173
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Phasing type SSB exciters produce a higher fidelity output
than filter type exciters *using filters of the type typically
found in ham equipment*. If you get high quality filters like
the Lumda FDM telecom filters, you get do just as well with
a filter type exciter. These filters will run you about $125 each.

In any event, if the receiver is a transceiver, and it uses
the same filter for receive and transmit, then all the nasty
ripples you avoided with a phasing type transmitter will
be reintroduced at the receiver. So you really need a phasing
transmitter and phasing receiver to get "hi-fi" audio. Or
use Lumda filters at both ends.

(Lumda is a small outfit that took over the FDM xtal filter
market when the big boys pulled out after T1 replaced FDM for
99% of the telecom market. FDM is still used for phone calls
to Alaska and Hawaii. It's SSB but doesn't sound like ham SSB.)

Rick Karlquist N6RK
rkarlqu@scd.hp.com

734. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 01:37:22 UTC
From: tomb@lsid.hp.com
Message-ID: <CnGF6A.GyI@hpcvsnz.cv.hp.com>
Source record: 118174

Mark Glusker (glusk@mechcad3.esd.sgi.com) wrote:
: A related question -

: If one has a transformer without any labeling,
: what is the best way to figure out how much
: current it can handle at its various voltages?

Two suggestions, both based on the idea that the heat rise
in the transformer determines the current handling capacity:

First, measure the resistance of the windings, including the
primary. The losses in a typical transformer divide between
core losses and copper losses, and a reasonable assumption if
you don't have more info is that the two will be equal in the
transformer operating under load. If the core losses are less,
you estimated conservatively, not a bad thing. You have to
get a feel for what a typical core size can handle in terms
of volt-amps; use this to estimate a max volt-amps for your
transformer. Use the winding resistances to allocate this
total among the windings. Note that some high-efficiency
core materials could again bias your answer to the conservative
side, but this, again, is probably not a bad thing. As a
check, you can add up all the copper losses as R*I^2 for each
winding, making sure you reflect all the secondary currents
back to the primary to find its loss. The power you come up
with should be reasonable for the transformer.

The second method involves actually measuring the transformer
heat rise. Copper has (about) a 0.4%/C temperature coefficient
of resistance, so by measuring the cold and hot resistances
of a winding, you can determine its temperature rise. The
idea is to operate the transformer under load for a long
enough time for it to heat up. You can use the first
method to allocate relative loads to the secondaries, and
run the transformer with these loads. I'll leave it up
to someone else to suggest max temp rise, but modern
insulations should be able to stand quite a bit. 100C
seems like it should be safe. Note that that's the _interior_
temperature, not the temperature you would measure at the
surface. Using this method, you can actually check if one
winding is getting hotter than another, and you can
rebalance the loads to equalize the temperatures.

Note that in both methods, judgement is required, and it's
safer to err on the conservative side. A transformer can
be designed to operate at very high temperatures, but if

you don't know that is was, you probably shouldn't push it.

Note also: these methods don't tell you that you are operating the primary at the design voltage or frequency. It helps a lot to know that it was designed to operate from your standard mains power, and to know which winding the primary is.

735. Re: Microwave Filter Help Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 01:46:14 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2nall6$5f3@nntp2.Stanford.EDU>
Source record: 118175

I just want to take a little space here to thank those of you
who responded to my original request for filter design info.
I have had a large number of responses both here and via
direct Email which have all been useful. It looks like I should
have a pair of working filters in not time.

Thanks again folks!

Steve Muther WF6R

736. Weather observations

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 05:42:41 UTC
From: cq068@cleveland.Freenet.Edu
Message-ID: <2nb3gh$jvf@usenet.INS.CWRU.Edu>
Source record: 118176

Any other operators interested in exchanging ideas/info on weather observation and instruments? Packet/remote weather observations? Do you really want to know what the temp and windspeed is somewhere else?

Or do I need to find where the wx-net hangs out??

Drop me a line, let me know your thoughts.

Steve Lapinskas
KA1JJA
cq068@cleveland.freenet.edu

737. Re: Ramsey kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 10:00:21 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar30.100021.25699@ke4zv.atl.ga.us>
Source record: 118177

In article <CnFwKq.AxM@ra.nrl.navy.mil> drumhell@claudette.nrl.navy.mil (David Drumheller) writes:
> I'm interested in getting on 440 mHz ... cheaply. So I would consider
>building a Ramsey kit. (They cost about $160.) Questions: How easy are
>they to build? Do they sell enclosures for them? How well to the radios
>perform? How much test equipment do I need to calibrate and tune the
>radio?

Oh, oh, here we go again. The Ramsey kit is fairly easy to build, and yes they sell a cabinet. They don't perform that well, and you need sophisticated equipment, at least a spectrum analyzer, to tune them up properly. (Maximum output and cleanest output aren't even in the same ballpark) It's not a horrible choice if you have access to the right equipment. But you'd certainly come out cheaper, and have a higher performance radio, if you convert ex-commercial surplus radios such as Motorola or GE to amateur service. There'll be tons of those in the upcoming Dayton fleamarket for $50 or less.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

738. Re: RF VHF/UHF Preamp Design Params.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 14:37:21 UTC
From: zlau@arrl.org
Message-ID: <1994Mar30.143721.6715@arrl.org>
Source record: 118178

Dave Kirkby (davek@medphys.ucl.ac.uk) wrote:

: I'm no expert, but can think of a few things that will effect noise figure.

: 1) Device itself. Gate length is especially importent. Smaller the better.

Though at 144 and 222 MHz, large gate devices such as the MGF 1801 and MGF 2116 usually win noise figure contests. The explanation is that they have less diffusion noise. However, on 2 meters, most people can't take advantage of such a low noise figure (location is just too noisy). A 0.2 dB noise figure preamp is pretty helpful for calibrating the noise figure setups, given that the uncertainty is often a few tenths.

One application that could use lower noise figure preamps is satellite work at 435 MHz and higher. A lower system noise figure preamp means you can often achieve good results with smaller antennas (less expensive and easier to point). Thus, instead of a 3 or 4 foot dish for Oscar 13 mode S working marginally, a really good preamp and a 2 foot dish could give excellent results.

: 2) Temperature, especially if its a HEMT. High electron mobility is
: helpful. The HEMT achieve this, but needs a low temp
:(liquid nitrogen 77K) to work well.

I've seen HEMT designs work quite well at room temperature.
HEMT preamps were at/near the top of last years NF results in all bands from 903 MHz to 10 GHz. A good HEMT design yields a sub 0.5 dB noise figure, at least on bands below 3.5 GHz.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

739. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 17:32:38 UTC
From: tomb@lsid.hp.com
Message-ID: <CnHnEE.496@hpcvsnz.cv.hp.com>
Source record: 118179
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Alan Bloom (alanb@sr.hp.com) wrote:
(concerning the generation of quadrature phase audio signals)

: But the hard part is getting the ampltude and phase matching
: to within a fraction of a dB or degree. As explained above, if you
: do that, the overall amplitude and delay response versus frequency
: will be quite good.

So, just how good is a practical network?

In some recent ARRL pubs (e.g., ARRL Handbook, 1987, pg 18-9) there's
a "matrix" type of phase shift network that claims to be able to give
good performance with loose-tolerance parts. I put this network into
Spice last nite, and thought some might be interested in the
results. Below are four columns plus a frequency column. The
second column is phase of one output channel. The third is that
phase with a constant 235 degrees and a ramp at -.066 degrees/Hz taken out.
The fourth is the magnitude frequency response for that channel.
The fifth is the magnitude frequency response with an additional
5-pole Butterworth low-pass at 3kHz and 5-pole Butterworth high-pass
at 320Hz, to limit the audio passband to the 300Hz-3kHz voice band.

(I hope tabs in the table won't make it unreadable at too many sites.)

freq	phase error	mag	filtered mag
Hz	degrees	degrees	dB	dB
200	-193.5	54.6	2.2	-8.4
230	-203.8	46.4	1.9	-6.1
264	-214.0	38.4	1.6	-4.0
303	-224.4	30.6	1.3	-2.3
348	-234.9	23.1	1.0	-1.2
400	-245.6	15.8	0.7	-.5
459	-256.5	8.8	.5	-.1
527	-267.6	2.3	.3	0
606	-278.8	-3.8	.2	0
696	-290.2	-9.2	.1	0
800	-301.6	-13.8	0	0
919	-313.1	-17.4	0	-.1
1056	-324.5	-19.9	0	-.1
1213	-335.9	-20.9	0	0
1393	-347.1	-20.2	.1	0
1600	-358.4	-17.8	.2	0
1838	-369.5	-13.2	.4	0
2111	-380.4	-6.1	.6	-.1

2425 -391.1 3.9 .8 -.5
2786 -401.7 17.2 1.1 -1.2
3200 -411.8 34.3 1.3 -2.4
3676 -421.5 56.1 1.6 -4.1

Note: I didn't calc the phase error including the Butterworth filters, which are NOT linear phase, but better than the Chebyschev typically approximated in a crystal filter.

The exact meaning of the "phase error" column is certainly open to discussion, but to me it's obvious that it's a very low error, and quite smooth with frequency. And both the magnitude columns show extremely good flatness in the voice band: particularly the one including the out-of-band audio filters.

I didn't include columns about the phase and amplitude difference between the channels, but it's a very close match in both.

(I hope to follow this with another followup about actually achieving 90 degree phase differentials with a finite number of poles and zeros, but that will have to wait for now.)

740. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 19:47:45 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Mar30.194745.28963@ke4zv.atl.ga.us>
Source record: 118187
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Well at worst I've stirred up an interesting discussion. :-)

In article <CnG3Jt.Htw@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

>The audio phase shift network is the interesting (read difficult) part
>of the system. It must maintain a 90 degree phase difference and
>excellent amplitude matching between the two outputs over something like
>a 10:1 frequency range (300 Hz - 3000 Hz). It generally does that by
>causing each of the two outputs to have a constantly-rising phase shift
>versus frequency characteristic, like thus:
> / /
>Phase Shift / /
> / /
> 720 deg / /
> / /
> / /
> 540 deg / /
> / /
> / /
> 360 deg / /
> I / /
> / / Q
> 180 deg / /
> / /
> / /
> 0 deg ___/_/
> | | | | |
> 300 600 1200 2400 4800 Hz
> Frequency
>

Now this chart illustrates the problem I've been talking about. As
we can see, the difference in delay with frequency is quite marked.
Sure the phase delay increases *smoothly* with frequency delta, but
the magnitude of the error rapidly climbs with increasing frequency
delta. This is our old friend click-boom. From 600 Hz to 2400 Hz delay
decreases by almost 20%, or about 0.2 ms. That much delay difference
is clearly audible.

If we look at Tom Bruhns' chart for a more complex matrix network:

phase filtered
>freq phase error mag mag
>Hz degrees degrees dB dB
>200 -193.5 54.6 2.2 -8.4

>400 -245.6 15.8 0.7 -.5
>527 -267.6 2.3 .3 0
>606 -278.8 -3.8 .2 0
>696 -290.2 -9.2 .1 0
>800 -301.6 -13.8 0 0
>1056 -324.5 -19.9 0 -.1
>1213 -335.9 -20.9 0 0
>1600 -358.4 -17.8 .2 0
>2111 -380.4 -6.1 .6 -.1
>2425 -391.1 3.9 .8 -.5
>2786 -401.7 17.2 1.1 -1.2
>3676 -421.5 56.1 1.6 -4.1

Now this is much better. The ends are horrible of course, but in the region 600-2400 Hz there is only a delay delta of 0.014 ms. That's hardly audible at all to someone with *good* ears. I'd note that this matrix phase shift network is considerably more complex than typical networks found in older phasing type equipment. And as Richard Karlquist noted, that's all for naught anyway unless the IF filtering of the receiver has correspondingly flat phase delay. Good RF filters can be as flat away from their edges as the matrix above, and RF filters work both ways.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

741. Re: Building WWV time decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 20:04:30 UTC
From: "Michael G. Mattock" <mattock@rand.org>
Message-ID: <2ncm0e$jk9@rand.org>
Source record: 118182

> I know that WWV broadcasts the current time in a digital coded
> format. I would like to find information on this format. Better
> yet I would like to find a schematic for decoder circuit.
>
> Any info leading me in the right direction would be helpful.

One of the old Signetics TTL data books (circa 1980) has a schematic
for a decoder circuit for the WWV current time, which is used to
drive a clock.

Michael Mattock | RAND
Voice: (310) 393-0411 x6548 | 1700 Main Street
Internet: Michael_Mattock@rand.org | Santa Monica, CA 90407-2138

742. frog people from mars (not the ones from venus

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 20:10:00 UTC
From: david.devoursney@pplace.com
Message-ID: <5c.328.15.0N17B348@pplace.com>
Source record: 118180

they are coming and they will take us over. flying on their giant pancakes they will reak havok on the lives of plumbers by giving everybody indigestion. they also will buy all are waffle irons in a futile attempt to keep us from getting valuble waffle tecknolagy.

743. special radiation caused by lipstick

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 20:21:00 UTC
From: david.devoursney@pplace.com
Message-ID: <5c.329.15.0N17B349@pplace.com>
Source record: 118181

this radiation is a special form usually causing people to grow what looks like a dead animal on top of their heads. Iknow a person who is living proof of this his hair is unique and he has been known to play with lipstick.

744. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-30 22:22:11 UTC
From: jjw@seastar.org
Message-ID: <CnI0t1.DJ@seastar.org>
Source record: 118183
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

As quoted from <CnG3Jt.Htw@srgenprp.sr.hp.com> by alanb@sr.hp.com (Alan Bloom):

> In another thread, I claimed that phasing-type single-sideband generators
> sound better than filter-type generators because phasing exciters have
> flatter amplitude and delay response. Gary Coffman disputed that. Rather
> than respond to Gary's long replies in detail, I'll just summarize how
> phasing-type SSB exciters work:
> _______ _____________ I ________
> Audio | Audio | | Phase-shift |----------- Mixer ->| |
> Input --| Filter|-->| Network | Q | | Summer |--> SSB Out
> |_______| |_____________|--- Mixer --------->|________|
> | |
> _____________ | ____|____
> | RF Oscillator |--+->| +90 deg |
> |_____________| |_________|
>
> I and Q are two audio outputs with a constant phase difference between
> them of 90 degrees. The input filter limits the audio frequency response
> to the range of the phase-shift network. The "+90 deg" box can be switched
> to -90 degrees to get the opposite sideband. (The output of each mixer is
> a DSB signal.)
>
> The audio phase shift network is the interesting (read difficult) part
> of the system. It must maintain a 90 degree phase difference and
> excellent amplitude matching between the two outputs over something like
> a 10:1 frequency range (300 Hz - 3000 Hz). It generally does that by
> causing each of the two outputs to have a constantly-rising phase shift
> versus frequency characteristic, like thus:
<much deleted>

So, the audio phase shift is the only 'interesting' part...
How, pray tell, can one having only the usual ham test gear (scope,
probably, dmm, maybe power supply) make the RF phase shift be 90
degrees and the same amplitude at, say 12MHz?
My dual-trace scope is not perfectly calibrated, so that's
out. Generating 48MHz and using flip-flops to get 12MHz in quadrature
doesn't work well in reality (theory is great, but unless your 48MHz
signal is *exactly* 50% duty cycle it has a *strong*component at just
under half of 48MHz, usually near 22MHz. Flip-flops, like all
non-linear devices, are very good as mixers, and the 22MHz mixes with
the 12MHz to make some *interesting* spurs. Filtering out these spurs
usually trashes the 90 degree and equal amplitude you got in the first
place, leaving you back at square one.)(yes, i do know about this.
i've tried it. repeatedly. i KNOW phasing sounds better, and i

WANTED it to work *sigh*). Generate it in quadrature with a dual DDS
and two DACs? Then you must filter the DACs outputs through two
different filters, introducing slightly different phase and amplitude
errors.
I wanted it to work. Really. I've listened to DC receivers
and to crystal filtered super-hets and the difference is amazing.
However, I also want to be able to build a receiver and actually *use*
it, not spend eternity designing the 'perfect' one.
One other interesting thing re: phasing vs filtering: you'll
need *some* additional filtering to do a transmitter anyway (for SSB
at least). This filter will cost you $$, and if you already have to
spend the $$ why not use it for the receiver too? That rather neatly
explains why darned few commercial ham rigs use phasing any more.
--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org

745. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 01:15:13 UTC
From: dmiller@crl.com
Message-ID: <2nd871$7nl@crl2.crl.com>
Source record: 118184

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: You can use a simple discriminator detector, run it's output through
: a slicer that switches at zero crossing, use a Costas loop or squaring
: loop to recover clock, and sample the slicer waveform at bit centers to
: data detect.

Wrong.

Costas and squaring loops are used for CARRIER recovery, not clock
recovery. Discriminators have been used to recover PSK where optimum
performance is not required, but synchronus detection is far better.

The classical approach is to use a Costas loop in a quadrature mixing
arrangement so as to recover the I and Q quadrature baseband signals.
Clock recovery is a second phase locked loop that utilizes the I,Q, or
both signals as its input. It is the I and Q waveforms that are sliced
and sampled by the clock recovery. The two resulting bitstreams then
typically go into a decoder and then a bit stream re-combiner.

If the data carrier is only BPSK instead of QPSK, the output of the
Q channel will be zero. Any coding that is employed will only need to
operate on this one channel and of course a bit-stream re-combiner will
not be necessary.

QPSK is simply two BPSK signals that are combined in quadrature.

--
~~ dmiller@crl.com ~~~~~~
~ Don Miller > Opinions expressed here < "They will never forget you ~
~ ESP, Inc. > are my own! < till somebody new comes along"~
~~~~~~ -->The Eagles<-~~~~~~~~~~~~
~~~~~~

746. How To Receive Fm Subcarrier Signals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 04:52:00 UTC
From: Timothy.Cadigan@f239.n109.z1.fidonet.org
Message-ID: <f9d_9403310042@blkcat.fidonet.org>
Source record: 118185

Kevin, a quick and dirty way to hear the subcarrier is to take the
audio out of the phone jack, and run it into the ant. of a general
coverage reciever. I use my IC-725. Switch to FM mode and tune
down between 50 and 80 khz. Connect the audio out ground to
ant terminal ground and run the audio "hot" through a small cap.
You may have to play with the value of the cap for best audio.
Tune the FM reciever around while twirling the gen coverage knob.
You should hear some subcarrier signals, especially if you are
in a big city. A better way would be to tap the the signal
out further up the chain from the audio jack. Use a small coax to
make the run from the FM receiver to the gen coverage receiver.
Best of luck!
73. Tim Cadigan, WC1F. Georgetown Univ.

747. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 10:33:05 UTC
From: blair@mksol.dseg.ti.com
Message-ID: <1994Mar31.103305.19492@mksol.dseg.ti.com>
Source record: 118186

Stephen C. Trier (trier@slc6.ins.cwru.edu) wrote:
: What are the reasonable ways to do binary phase shift keying
: demodulation for amateur radio? A pointer to a reference on it would
: be fine. I've found lots of statements that it can be done, but
: nothing detailed about how to do it.

A cheap and dirty way to do this is with a delay line IFM
(Instantaneous Frequency Measurement). The input is split,
one path is delayed (delay = desired pulse width = not much),
the two are fed into a quadrature phase comparator (which
is just an IQ detector where one of the signals is used
for the LO). Then filter the crap out of the output and AC
couple it.
It's not pretty, but its cheap and small.
Art.

748. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 14:59:17 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994Mar31.145917.11579@kocrsv01.delcoelect.com>
Source record: 118188

In article <2na5ma$hke@gazette.esd.sgi.com>, glusk@mechcad3.esd.sgi.com (Mark Glusker) writes:
> A related question -
>
> If one has a transformer without any labeling,

I am frequantly faced with this problem. After I make my best quess using methods similar to those that other posters suggested, I hedge my bets a little. The fist time I apply power to what I think is the primary, I supply it from a variable auto-transformer and slowly increase the voltage while monitoring the other windings with a voltmeter (set to the highest range!). In case I make a mistake despite this caution, I hook a 50 to 100 Watt light bulb in SERIES with the primary. Not accross it, but in series to limit the current. An unloaded transformer should not draw enough current to light the bulb. If it starts glowing brightly, find out what's wrong.

In my opinion, no one who does much home brew should be without a variable auto-transformer and a light bulb hooked up to jumper clips. They are useful in many circuits when caution is called for. When I used to do TV service, for instance, if I got a set in with a shorted horizontal output, and no other problem apparent after a normal check, I would temporarily replace the fuse with a 100 W light bulb. It saved the new transistor on several occasions. 12 V bulbs of various sizes are useful for lower voltage circuits. Get the larger sizes as automotive parts.

--
Jim Buchanan
c22jrb@kopt0017.delcoelect.com
c22jrb@delphi.com
N9SDV (formerly WD9GHJ)

749. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 19:26:34 UTC
From: tomb@lsid.hp.com
Message-ID: <CnJnCB.MuC@hpcvsnz.cv.hp.com>
Source record: 118189

Jim Buchanan (c22jrb@kocrsv01.delcoelect.com) wrote:

: The fist time I apply power to what I think is the primary, I supply it from
: a variable auto-transformer and slowly increase the voltage while monitoring
: the other windings with a voltmeter (set to the highest range!). In case I
: make a mistake despite this caution, I hook a 50 to 100 Watt light bulb in
: SERIES with the primary. Not accross it, but in series to limit the current.

Amen! I strongly agree with all that Jim wrote in that followup. If you can't afford a variable auto-transformer yet, at very least use the light bulbs. Note that light bulbs have higher resistance when hot than when cold, and so tend to act as "constant current" devices; different power bulbs can be used for different expected currents.

Also, if you can get to the actual winding wire on a transformer, a pretty safe rule of thumb is "700 circular mils per amp." Some old transformers were done at 1000 or so, but I think all modern ones would be quite safe, especially in benign ham applications (not out in boiling sun) at 700. Wire tables should have the circular mils listed vs gauge, but it's just the diameter of the copper in mils, squared.

After you've determined the safe RMS current load for all your windings, be sure that you take into account that the average current delivered by a capacitor-input-filter rectifier circuit is much less than the RMS current it puts through the transformer winding. A 2:1 ratio isn't uncommon. And a bridge rectifier makes more efficient use of a transformer than does a full wave center-tapped.

750. Re: frog people from mars (not the ones from venus

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 19:43:02 UTC
From: mjsilva@ted.win.net
Message-ID: <225@ted.win.net>
Source record: 118190

In article <5c.328.15.0N17B348@pplace.com>, David Devoursney (david.devoursney@pplace.com) writes:
>they are coming and they will take us over. flying on their giant
>pancakes they will reak havok on the lives of plumbers by giving
>everybody indigestion. they also will buy all are waffle irons in a
>futile attempt to keep us from getting valuble waffle tecknolagy.
>

Is this guy one of those thrill-seekers who licks toads? Just to be safe, though, I've buried a waffle iron out in the backyard until the Green Ages pass.

Mike, KK6GM

751. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 20:15:22 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2nfb0q$d12@hpscit.sc.hp.com>
Source record: 118191

In article <2nd871$7nl@crl2.crl.com>, Donald J. Miller <dmiller@crl.com> wrote:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>
>: You can use a simple discriminator detector, run it's output through
>: a slicer that switches at zero crossing, use a Costas loop or squaring
>: loop to recover clock, and sample the slicer waveform at bit centers to
>: data detect.
>
>Wrong.
>
>Costas and squaring loops are used for CARRIER recovery, not clock
>recovery. Discriminators have been used to recover PSK where optimum
>performance is not required, but synchronus detection is far better.
>
>The classical approach is to use a Costas loop in a quadrature mixing
>arrangement so as to recover the I and Q quadrature baseband signals.
>Clock recovery is a second phase locked loop that utilizes the I,Q, or
>both signals as its input. It is the I and Q waveforms that are sliced
>and sampled by the clock recovery. The two resulting bitstreams then
>typically go into a decoder and then a bit stream re-combiner.

This implies you cover the carrier then recover the clock. On the
other hand there are remodulator schemes that recover the clock without
need for carrier recovery, then use the recovered clock to remodulate
the incoming data so as to recover the carrier. [i.e. it is possible
to recover just the clock (not the data) without first recovering the
carrier].

There are also differential self clocking schemes that don't require
any formal clock PLL.

You're right that the discriminator idea is a non starter for if you
want anything close to optimum performance. Among other things, the
DC drift is a nightmare. In general, Costas loops
work far better than squaring loops when properly designed. Unfortunately,
they are considerably harder to design properly compared to a frequency
doubler (= a full wave rectifier, which is hard to screw up).

>QPSK is simply two BPSK signals that are combined in quadrature.

A semantic nit here. Two BPSK signals in quadrature is described as
4QAM. It is only identical to QPSK in the absence of any data filtering
at the transmitter. Otherwise, the 4QAM signal will not have constant
envelope, but a true QPSK signal will have constant envelope.
You can make a similar argument that "BPSK" signals with data filtering
ahead of the modulator are really ASK signals because again the envelope

is not constant.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

752. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 20:51:38 UTC
From: alanb@sr.hp.com
Message-ID: <CnJrA3.1I3@srgenprp.sr.hp.com>
Source record: 118192
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: In article <CnG3Jt.Htw@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

: >The audio phase shift network is the interesting (read difficult) part
: >of the system. It must maintain a 90 degree phase difference and
: >excellent amplitude matching between the two outputs over something like
: >a 10:1 frequency range (300 Hz - 3000 Hz). It generally does that by
: >causing each of the two outputs to have a constantly-rising phase shift
: >versus frequency characteristic, like thus:
: > / /
: >Phase Shift / /
: > / /
: > 720 deg / /
: > / /
: > / /
: > 540 deg / /
: > / /
: > / /
: > 360 deg / /
: > I / /
: > / / Q
: > 180 deg / /
: > / /
: > / /
: > 0 deg ___/_/
: > | | | | |
: > 300 600 1200 2400 4800 Hz
: > Frequency

: Now this chart illustrates the problem I've been talking about. As
: we can see, the difference in delay with frequency is quite marked.
: Sure the phase delay increases *smoothly* with frequency delta, but
: the magnitude of the error rapidly climbs with increasing frequency
: delta. This is our old friend click-boom. ...

Other people besided Gary may be confused by this, so I'll post an
explanation.

The graph above plots phase, not delay. A constant delay results in
a constantly-rising phase plot. For example, a 1 millisecond delay
is 36 degrees at 100 Hz, 360 degrees at 1000 Hz, 3600 degrees at
10,000 Hz, etc.

Constant delay does not cause the "click-boom" that Gary mentioned. Think about it: You could record a voice on a tape recorder and play it back DAYS later without any "click boom." It's only when the delay is different at different frequencies (that is, the phase versus frequency plot is not a straight line) that there is a potential problem.

While the plot above looks like a straight line, it really isn't because of the logarithmic x-axis. However, as the chart that Tom Bruhns posted of a typical phase-shift network shows, it really isn't too bad. His chart shows that between 400 and 2786 Hz, the maximum phase error from a straight line varies smoothly between +17.2 to -20.9 degrees, which is far better than you would get with a typical transceiver-type crystal filter.

I expect most of the delay variation would come from the audio filter (that comes before the phase-shift network). Such a filter can be much flatter than a typical crystal filter for the three reasons I mentioned in a previous posting: (1) Doesn't need as sharp a cutoff as a receiver-type filter, (2) Can use a filter type with inherently flatter delay (non-Chebyshev), and (3) Pole Q and placement are much easier to control at audio frequencies than at RF.

AL N1AL

753. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-03-31 21:17:22 UTC
From: tomb@lsid.hp.com
Message-ID: <CnJsGy.1Jo@hpcvsnz.cv.hp.com>
Source record: 118193
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Alan Bloom (alanb@sr.hp.com) wrote:
: In another thread, I claimed that phasing-type single-sideband generators
: sound better than filter-type generators because phasing exciters have
: flatter amplitude and delay response.

Yesterday, I posted results of a simulation of a quadrature audio network outlined in the ARRL Handbook. One thing to note is that the phase ramp is as Alan suggests in his posting. The "frequency" column is in 1/5 octave steps, and the delta phase between entries is practically the same across the band. So the phase looks like a straight line on a log-frequency scale.

But what if it was a design goal to come up with a quadrature phase network with flat frequency response and linear phase? Would that be possible? I think so, and I offer comments below in support of that idea. If I don't get to it, maybe someone else can check out the suggestion at the end to see if it really can work.

Soapbox: I'm treating this as a design problem, not something to wave my arms about. I start by summarizing some things that are likely to be relevant that could be tools to lead to a good solution. There is an assumption that flat response and linear phase will lead to something that people will think "sounds good." That may be wrong, but so far there seems to be good agreement about it. My purpose here is to simply explore ways to achieve this in a phasing system. This does NOT say that the same thing can't be done with filtering at carrier frequencies.

Observations:

0. The relative phase and amplitude response of a system can be completely determined by the positions of the poles and zeros representing the system; there is no need to commit to a particular physical implementation until the desired pole and zero positions are determined.

1. If a pole at -x+jy is balanced by a zero at +x+jy, the frequency response from that pair is exactly flat. The phase response, d(phi)/df, is exactly twice as much for such a pair as it is for the pole alone, at every frequency.

2. Techniques exist for putting poles at any interesting place on the left half of the s-plane, and for putting zeros at any interesting place on the s-plane. For example, for audio work, state-variable filter blocks can do this.

3. If one channel of a quadrature audio network has a phase ramp
vs frequency d(phi)/df = x, then the other channel must have
the same d(phi)/df over the band of interest to maintain a
constand phase difference between the channels. Since d(phi)/df
determines group delay, the two channels will have identical
group delays.

4. Linear phase is characterized by d(phi)/df invariant with frequency.

5. A strict delay has zero phase shift at zero frequency. Thus to
achieve quadrature phase, at least one channel will be characterized
by a phase shift in addition to any delay, even if d(phi)/df is
invariant over the band of interest.

6. None of the above precludes having a constant d(phi)/df in each
channel with a constant 90 degree phase difference between channels
and a flat frequency response in the band of interest. However, it
also doesn't tell you how to achieve this--it only provides some
hints.

7. A maximally-flat-delay (MFD) filter achieves a very constant d(phi)/df
over its passband.

8. A MFD _lowpass_ filter has nearly constant d(phi)/df through zero
frequency, and zero phase shift at zero frequency. It represents a
simple delay.

9. A MFD _bandpass_ filter has nearly constant d(phi)/df over its
passband, but not outside. The result can be a phase shift relative
to a MFD lowpass in the shared passband. THIS IS A KEY TO A POSSIBLE
ANSWER TO THE ORIGINAL QUESTION!

10. It _should_ be possible to find a pair of MFD filters with overlapped
passbands (either two bandpass filters or a lowpass and a bandpass)
which have equal d(phi)/df and a 90 (or 45--see paragraph 11) degree
phase difference between the channels in the shared passband.
Actually finding such a pair is the exercise remaining to be done!
Any volunteers?

11. MFD filters are notorious for non-flat amplitude response. This can
be taken care of by invoking paragraph 1: put a zero in for each pole,
which will double d(phi)/df and make the frequency response dead flat.
This is why we only need 45 degrees between the MFD filters used as
prototypes as suggested in paragraph 10.

12. Expect that it will take fairly high order filters to accomplish this
over the 300Hz-3kHz band. Tenth order wouldn't surprise me, to get
0.1 degree matching. The amplitude matching will depend only on
how accurately the implementation can place the poles and zeros at
the desired positions.

As a simple feasibility check, I asked a curvefitter to fit to a couple
linear phase ramps with constant amplitude, offset by 90 degrees, in the
range from 300Hz to 3.5kHz, and it didn't have any trouble getting

within a tenth dB and under a degree, with about 14 poles and 14 zeros
for each. None of the poles was particularly high Q: max about 8.

754. Which HF rigs have Transverter Jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 00:21:44 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Apr1.002144.141549@yuma>
Source record: 118194
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Subject line says most of it. I know the Kenwood TS-820 has 'em and I've heard the TS-430 has 'em, but I'm not sure. I'm mostly interested in synthesized rigs, but any info is greatly appreciated!!!
Galen, KF0YJ

755. Source for RF Power MOSFETS (IRF511)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 01:19:39 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Apr1.091939.1@ntuvax.ntu.ac.sg>
Source record: 118195
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi,

Can anyone tell me a source for IRF511/510 MOSFETs? Also are there other types of MOSFETs suitable saw a power of 40 or 50
watts range? Where can I get them? Tks.

73,
Daniel

756. Re: Which HF rigs have Transverter Jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 02:11:16 UTC
From: aa813@cleveland.Freenet.Edu
Message-ID: <2nfvs4$78q@usenet.INS.CWRU.Edu>
Source record: 118196
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In a previous article, galen@picea.CFNR.ColoState.EDU (Galen Watts) says:

>Subject line says most of it. I know the Kenwood TS-820 has 'em and I've
>heard the TS-430 has 'em, but I'm not sure. I'm mostly interested in
>synthesized rigs, but any info is greatly appreciated!!!
>Galen, KF0YJ
>
Yes Virginia,

There is a Transverter Jack on the TS-430. It is an 8-pin DIN connector
used to interface a VHF or UHF transverter. (I am quoting the manual. I
never used it....)

73,
Joe N8IPC

757. Looking for FTP site

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 02:25:44 UTC
From: Bob Lombardi <boblombardi@delphi.com>
Message-ID: <hu3vxvY.boblombardi@delphi.com>
Source record: 118197

I have a program that I would like to find an ftp site for.

For the last several years, I have been working on and using
a filter synthesis program called FilDes, or FDS. I'd like to
get it into the hands of hams or others who might find it useful.
FilDes designs lumped element filters: Butterworth and Chebychev
lowpass, highpass, bandpass, bandreject and coupled resonator
(narrow bandpass) filter characteristics are available. Chebychev
filters can be synthesized in any degree of ripple from 0.001 to
3.000 dB, and specified by either ripple or 3 dB bandwidth. In
addition, elliptic LP and HP filters are available.

In 1990, FilDes was a "selected entry" in RF Design magazine's
SW contest. Since then, I've made a lot of improvements to it,
and improved its usefulness. The version in RF design was 1.0,
it's currently at rev. 1.24. FilDes has been used professionally
to design many filters. Some are already in use in commercial
equipment, and others are scheduled for launch into space within
the next few years.

FilDes is the direct descendant of a program I wrote that designed
only the narrowband coupled resonator filters in only a few choices
of transfer characteristics. This program was written on the C64
and an article with it was the cover story in Ham Radio for March,
1986. FilDes was written in Turbo Pascal and runs on pretty much
any PC clone. A math coprocessor will be used if present, and speeds
up the elliptic filter section. A color monitor is not strictly
required, but I really don't know if all I/O screens are legible
on monochrome.

Because I pay per minute for this connection, I'd like to put it
on an anonymous FTP site. I hope that the combination of the
online help and the doc file that comes with it can explain
everything a new user would need to know. Because Delphi's ftp
connection doesn't allow binary upload, I will need to uuencode it
and then transfer it to the site. The site manager will need to
uudecode it.

If you run an anonymous ftp site, let me know, and I'll ftp or
even mail it to you (since it will be a uuencoded .zip file).

73,
Bob

--
Bob Lombardi WB4EHS >>>> internet: boblombardi@delphi.com

Melbourne, FL >>>> Engaged in too many hobbies to list here!
"It's great to be young and insane!" -- Michael Keaton `The Dream Team'
"It's pretty good to be middle-aged and insane, too." -- Me

758. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 03:04:44 UTC
From: dmiller@crl.com
Message-ID: <2ng30c$g7r@crl2.crl.com>
Source record: 118198

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: >QPSK is simply two BPSK signals that are combined in quadrature.

: A semantic nit here. Two BPSK signals in quadrature is described as
: 4QAM. It is only identical to QPSK in the absence of any data filtering
: at the transmitter. Otherwise, the 4QAM signal will not have constant
: envelope, but a true QPSK signal will have constant envelope.
: You can make a similar argument that "BPSK" signals with data filtering
: ahead of the modulator are really ASK signals because again the envelope
: is not constant.

I really didn't know there WAS a difference between 4QAM and QPSK. EVERY BPSK or QPSK radio I have ever worked on has had data filtering ahead of the modulator. I have found true "constant envelope" PSK to be rather uncommon, although it is certainly desirable when you must use non-linear PAs. Offset QPSK is relatively common and the envelope is "sort of" constant.

Your point could be defended if one was to take the rigid stand that in PSK *ONLY* the phase should change, but the world does not seem to have taken that stance. Rather, the information is contained in the phase changes, and the path between states does not seem to enter into whether you should call it PSK or not. QPSK, under this less rigid definition, could also be called 4QAM. If knowledge of the phase is not enough to define the symbol, as in ANY non-circular constellation, than the convention is to call the modulation QAM.

You can NOT reall draw an equivilence between BPSK and ASK since a "1" and a "0" have the same amplitude -- a diode detector cannot tell the two apart. There is no quadrature component transmitted, so 2QAM would not be appropriate either :)

--
~~ dmiller@crl.com ~~~~~~
~ Don Miller > Opinions expressed here < "They will never forget you ~
~ ESP, Inc. > are my own! < till somebody new comes along"~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ -->The Eagles<-~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

759. Re: Source for RF Power MOSFETS (IRF511)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 13:38:34 UTC
From: wrb@ccsitn.cb.att.com
Message-ID: <CnL1wA.1t8@nntpa.cb.att.com>
Source record: 118199
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Apr1.091939.1@ntuvax.ntu.ac.sg>,
<asirene@ntuvax.ntu.ac.sg> wrote:
>Hi,
>
> Can anyone tell me a source for IRF511/510 MOSFETs? Also are there other types of MOSFETs suitable saw a power of 40 or 50
>watts range? Where can I get them? Tks.
>
>73,
>Daniel

Hell, I think Radio Shack carries the IRF511. Probably expensive though.
Try Digi-Key.

--
Wally Blackburn Clinton-Gore - Socialist Leadership
wrb@ccsitn.cb.att.com for the 90s!
Amateur Radio Station AA8DX I'm the NRA.
More people have died in Ted Kennedy's car than from my gun!

760. Re: frog people from mars (not the ones from venus

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 14:29:02 UTC
From: jimn0oct@aol.com
Message-ID: <2nhb3e$5d7@search01.news.aol.com>
Source record: 118200

In article <225@ted.win.net>, mjsilva@ted.win.net (Michael Silva) writes:

well, we're here. BTW, our music (gas music) comes from Venus, or Shirley, as we call the second planet from Roy. Take me to you IHOP.

761. Re: Source for RF Power MOSFETS (IRF511)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 14:31:08 UTC
From: jimn0oct@aol.com
Message-ID: <2nhb7c$5eb@search01.news.aol.com>
Source record: 118201

In article <CnL1wA.1t8@nntpa.cb.att.com>, wrb@ccsitn.cb.att.com (Wally Blackburn) writes:

Radio Shack, DIGIKEY, Newark, and probably Ocean State Electronics or Dan's Small Parts.

73, JimN0OCT

762. Re: Source for RF Power MOSFETS (IRF511)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 14:54:25 UTC
From: mellis@ramcad.pica.army.mil
Message-ID: <CnL5Ep.KxC@pica.army.mil>
Source record: 118213
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I>> Can anyone tell me a source for IRF511/510 MOSFETs? Also are there other types of MOSFETs suitable saw a power of 40 or 50
>>watts range? Where can I get them? Tks.
>>
>>73,
>>Daniel
>
>Hell, I think Radio Shack carries the IRF511. Probably expensive though.
>Try Digi-Key.
==========

Radio Shack carries the IRF-510

60 V, 3A, "On" resistance 0.6 Ohm.

Part # 276-2072, cost: $1.99

Source, 1993 R/S catalog. (latest I've got here).

----Mark N2WZB

763. Re: Which HF rigs have Transverter Jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 15:01:14 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr1.150114.7520@ke4zv.atl.ga.us>
Source record: 118210
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <1994Apr1.002144.141549@yuma> galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:
>Subject line says most of it. I know the Kenwood TS-820 has 'em and I've
>heard the TS-430 has 'em, but I'm not sure. I'm mostly interested in
>synthesized rigs, but any info is greatly appreciated!!!
>Galen, KF0YJ

Icom IC-735 has them, IC-725 doesn't.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

764. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 15:33:28 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr1.153328.7880@ke4zv.atl.ga.us>
Source record: 118211

In article <1994Mar31.145917.11579@kocrsv01.delcoelect.com> c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
>The fist time I apply power to what I think is the primary, I supply it from
>a variable auto-transformer and slowly increase the voltage while monitoring
>the other windings with a voltmeter (set to the highest range!). In case I
>make a mistake despite this caution, I hook a 50 to 100 Watt light bulb in
>SERIES with the primary. Not accross it, but in series to limit the current.
>An unloaded transformer should not draw enough current to light the bulb.
>If it starts glowing brightly, find out what's wrong.

An *excellent* tip. I do this myself. I've got a selection of bulbs,
from 220 volt rough duty models, to 110 volt ordinary incandescents,
to 12 volt automotive lamps, to little flashlight bulbs all mounted
on a load board. I can select the proper load for power supply testing,
current limiting, etc, in a matter of seconds. If I make a mistake,
all I'm out is a light bulb, not a zorched piece of expensive gear.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

765. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 16:17:51 UTC
From: trier@slc6.ins.cwru.edu
Message-ID: <2nhhfg$g5e@usenet.INS.CWRU.Edu>
Source record: 118212

While this is fascinating, you are all going way over my head. (The exception is the discriminator suggestion -- I understood that.) Can anyone suggest a good book from which I could figure out how these demodulators work?

My particular interest is doing the BPSK demodulation in the 70 cm or 33 cm bands, for use in a direct-sequence spread spectrum receiver. No, I'm not planning to build the thing any time soon. It's just a paper design so I can get a grasp on how these things work.

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quois."
Home: sct@po.cwru.edu - Peter Schickele

766. Looking for probes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 17:14:18 UTC
From: michell@canada.hp.com
Message-ID: <2nhkpa$5qd@hpunsca.canada.hp.com>
Source record: 118202

Hello,

I would like to play around with what I would call an intelligent house,
(so I can concentrate on doing QSOs!!). By this I mean that a computer
would turn on fans or heaters depending on the theperature or humidity.
I am more a software person and can take care of that part but would like
to buy the probes or sensors that would tell the computer what the persent
temperature or humidity is.

Would anyone know where I could get stuff like that from, an address
or phone number would be greatly appreciated. Thanks!

73,
Michel VE9MDL

PS: Also looking for solar cells, would like to run my radios from
a battery "charged" by the sun.

Michel Landry, PSO michell@canada.hp.com
Hewlett-Packard (Canada) Ltd. 506/859-1332
Moncton, New Brunswick, Canada
---

767. Re: B+ transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 17:25:52 UTC
From: lakeith@robins.af.mil
Message-ID: <2nhlf0$jlg@wrdis02.robins.af.mil>
Source record: 118203

Mark Glusker (glusk@mechcad3.esd.sgi.com) wrote:
: A related question -

: If one has a transformer without any labeling,
: what is the best way to figure out how much
: current it can handle at its various voltages?

The ARRL handbook has a nomograph that you can use to estimate the
total power available from a transformer.. It is based on the area of
the core/windings and will give you a ball park figure to work from.

I think it is in the section on power supplies...

73,

Larry, KQ4BY

768. Re: Which HF rigs have Transverter Jacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 18:00:10 UTC
From: kilgore@wichita.tivoli.com
Message-ID: <2nhnfa$40d@tivoli.tivoli.com>
Source record: 118204
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

The Kenwood TS-850 has transverter connections. I don't have my manual with me here at work,
but I will be glad to give you any specific information if you need it.

Jeff, KC1MK

769. Minisport Hacker #21

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 18:33:20 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <0D04Jc6w165w@opus-ovh.spk.wa.us>
Source record: 118205

MiniSport Laptop Hacker - Vol #21. April 1994
To discourage pecuniary interests, Copyright (c) 1994 Brian Mork

>>> ADMIN
The MLHacker series is formatted to print out on 8.5"x11" sheets manually fed into an Epson LQ-850. I print at 8 lpi, which gives 82 lines per page. My goal is to make each MLHacker one to two pages, to fit front and back on one page. Back issues are available via Internet e-mail and ftp archives and direct from my data line listed below. File download privilege is given on the first call. Use the F)ile option and L)og into the \public\computer directory. No cost 'cause I just like doing it. Do something you're interested in for free and pass it on!

The Air Force has me committed to some massive amounts of overseas flights during April and May. For this reason, I expect MLHacker will take a hiatus during that time.

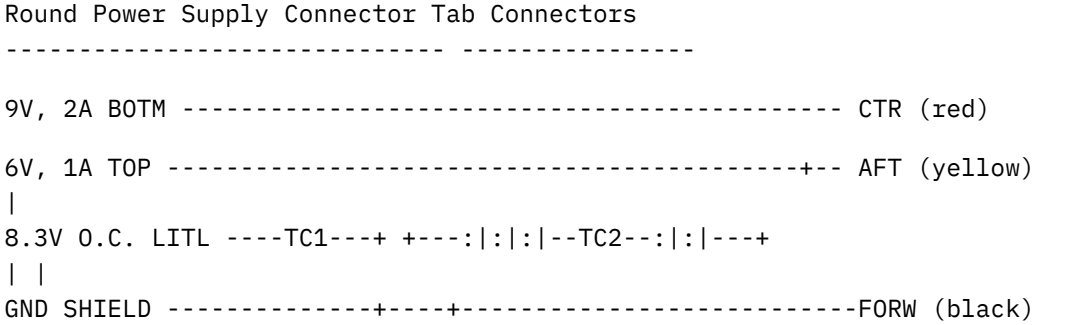
>>> AUTOMOBILE POWER SUPPLY
Something has been bothering me ever since issue #12 of MLHacker. I mentioned how you could tap into your car cigarette lighter, step the voltage down to 9 volts and use that to power your Minisport. So far, true. My bad recommendation was the placement of a noise-killing capacitor and inductor.

Yes, put a big inductor in series (old lamp ballast works fine) to kill ignition glitches. But don't put the capacitor on the car side of the inductor. Put it on the *computer* side of the inductor. The problem is this: When you switch off the computer, the magnetic field sustained by the inductor collapses, forcing continued current flow. But the computer is off! Being off is a high resistance. As the charge collects on this high resistance, the voltage peaks very high. To some extent, the internal Minisport battery, which is effectively in parallel across the power line, begins to conduct (i.e. charge up) as the voltage rises, so there is some limit on the voltage. But I was wrong to suggest putting the capacitor where the inductor could feed off from it. It's much better to put it on the computer side, where it will dampen the inbound current. An additional improvement would be to put a diode across the inductor (cathode, banded end toward the car). It will then short out the inductor spike upon power-down.

Some folks have indicated they run the Minisport straight from 12 volts. I'm not sure I'd recommend that, but I'd be interested in anybody's success doing this. Battery? Direct from car? One MLH reader is working to modify a drill battery pack to power his Minisport. I hope to talk him into writing up notes on the project.

>>> INSIDE THE BATTERY PACK
Jim sent me a dead battery pack to rip apart. Aha! The final link to the puzzle. MLH #12 discusses the wall adapter/battery pack connection. MLH #14 discusses the battery pack/computer connection. Issues #17 and #18 discuss the switching power supply board inside the Minisport. Finally, here's the stuff from inside the battery pack. In the process of documenting this, I discovered another error from issue #12--my description of the small pin on the 3-pin charging connector. I believe the information provided here to be the correct interpretation.

BATTERY PACK INTERNALS



There is also a tiny chip capacitor between the 9V supply rail and ground. A parallel surface mount spot (for a resistor?) is empty on the circuit board inside the one battery pack I've inspected.

The charger adapter has four connections: the shield, two similar pins, and a third pin smaller than the other two, thus the titles BOTM, TOP, and LITL. The tab connections on the bottom of the battery pack correspond to the three slide connectors visible inside the minisport when you remove the battery pack. The colors correspond to the wiring color visible inside the computer when the bottom is removed.

TC1 is a thermal cutoff unit, tightly mounted to the battery cell closest to ground. TC2 appears physically similar. While charging this battery pack, I monitored the voltages on the power supply connector. BOTM was 9.2V, TOP was 7.6V, and LITL was zero volts. I applied a heat gun onto TC1, and at 0:12 the voltage at LITL jumped up to 8.3 volts. At 0:40, TC1 closed and the voltage at LITL went back to 0 volts.

It seems clear that the design of this system is to overvoltage the batteries (7.2v onto a 5x1.2 => 6.0v battery pack) and when the batteries get warm, the thermal cutoff ungrounds a signal back to the charging unit. To confirm that the charger responds to the signal, I loaded the battery pack with a 20 ohm resistor and hooked up the charger, giving 7.2 volts across the resistor (about 350 mA drain, 2.5 watts). I would expect that if the charger shut off, the voltage would drop a little bit as the battery pack picked up the entire load and started discharging. Sure enough, after about 20 seconds of heating TC1, the voltage across the resistor dropped to 6.8 volts.

Heating TC2 has expected results. While charging, I measured 7.0 volts across an unloaded, charging battery. At 0:20 of heating, an audible

click occurred and the voltage dropped to 2.9 volts. I turned off the heat gun and at 1:14, I heard another click and the voltage comes back up. While *not* charging, the voltage goes from 6.5 to 0.0 with nearly identical timing. I think the 2.9 volts observed while charging was residual output from the charging unit.

>>> BAYCOM VS POOR MAN'S PACKET
Poor Man's Packet software works fine to receive packets on the Minisport using the hardware described back in MLHacker #9. It does not work on transmit. If you try to send a packet, the transmit tones just lock up at 1200 Hz or 2200 Hz. This was confirmed using another ham's (thanks Ron) PMP hardware rigged to run off COM1 (normal DB-9 out the back). PMP is written in C, including the AX.25 bit packing routines. I think these are just not fast enough when run on the 8 MHz Minisport.

Baycom uses a separately loaded driver to talk to the hardware. It's small and efficient, probably written in assembly. I got a copy of Baycom software and using Ron's Baycom hardware, which was rigged to operate on a parallel port, everything worked fine.

Conclusion? The Minisport needs bit packing routines written in assembly. Baycom offers this; PMP does not. I thought the PMP hardware was designed to be bit compatible with Baycom (e.g. RTS does the PTT function, and so on). Apparently, this is not so. When I redirect the Baycom to COM2, it does not work with the PMP hardware I built and described in MLHacker #9.

I don't have the time right now to do an assembly rewrite of the PMP software, so I want to figure out how to use the Baycom software. Anybody out there more familiar with Baycom and what bit lines it uses for what? Eventually I'll poke around and find out what's going on, but maybe somebody could save me the trouble.

>>> FUTURE PROJECTS
I saved up money for several months and purchased a Fluke 97 digital storage scope / DMM "do everything" box. It's roll mode data monitor worked great for probing the battery pack. Expensive, but a *superior* bench top accessory. I'm interested in anybody using one of these. Mine has an optical data interface and that will, I'm sure, eventually be hooked to my Minisport.

I also picked up a 670 nm laser diode assembly, including a photodetector and stepper motor. The light beam comes up through the shaft of the stepper motor, allowing the outbound beam to be aimed onto one of eight mirrored segments, and reflected forward. Inbound light is collected by all eight segments simultaneously and focused onto the on-axis photodetector. I wonder if I can hook this up to the computer to do a laser light show. Or maybe a proof of concept optical radar. Hmm... :-)

Please provide feedback! * Direct data 1-509-244-9260
* ARO Net KA9SNF@wb7nnf.#ewa.wa.usa
* Internet bmork@opus-ovh.spk.wa.us

73, Brian * 6006-B Eaker, Fairchild, WA 99011

770. QRP-linear for HW-7?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 19:05:30 UTC
From: MIKSUORA@SARA.CC.UTU.FI
Message-ID: <CnLH16.5oz@utu.fi>
Source record: 118206

HW-7 QRP-rig has output power of about 2...3 watts, depending
on the frequency band used. This is quite enough if one has a
proper antenna. Sometimes I do /P -operations and have to live
with a lousy longwire... A few more watts of power to compensate
my poor antenna would be great. Power comsumption will not be
a problem 'cause I can use car battery.

Has anyone built a small broadband amplifier to go with HW-7?
1..2 watts input and maybe about ten watts of output power. I
assume this could be a simple one or two transistor project. If
you have experience, simple plan, some "do and dont's"..let me know!

73 Mike OH1NZQ @ OH1RBU.FIN.EU
internet miksuora@sara.utu.fi

771. Re: advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-01 20:03:18 UTC
From: dlkerl@cmack.b11.ingr.com
Message-ID: <2nhum6$5ij@b11.b11.ingr.com>
Source record: 118207

In article <2mriqq$a0l@cs.uct.ac.za>, acotton@cs.uct.ac.za (A Cotton) writes:
|> Hi Everyone.
|>
|> I'm looking for advice from someone knowledgable in radio and electronics.
|> A normal f.m radio recieves up to about 108 Mhz.
|> Does anyone know how to adjust it to recieve from 108 to about 130 Mhz?
|> These are the aircraft frequencies and it'd be cool to listen in. I've
|> heard that it's quite a simple operation involving a small adjustment in
|> any cheap f.m reciever.
|> Any advice is very welcome. Remember I'm a very non-specialist audience
|> here, so please keep it simple.
|> I'd appreciate mail in this regard.
|> Thanks-
|>
|> -- Ari Cotton.
|>
|>

A couple of problems:

1. Aircraft frequencies are AM, which most FM receivers are designed to reject. You'd need to eliminate the IF limiting and change the characteristics of the detector in the receiver to accomodate this.

2. Broadcast FM channel bandwidth is large - around 150 kHz, with 200 kHz spacing between channel centers. Channel spacing on the aircraft band is 25 kHz, meaning that several adjacent aircraft channels would be received simultaneously. This may or may not be a problem in your particular area. Narrowing the bandwidth of the receiver is a non-trivial task.

It would probably be easier to modify an old public service band (146-174 MHz) receiver, since its bandwidth is narrower. Ramsey has a kit aviation radio that runs about 30 bucks, that would probably be much less difficult to deal with. Some available scanners pick up the AM aircraft band, but the cost considerably more.

Dan Kerl
dlkerl@ingr.com

PS - Ramsey's number is 716 924-4560. I have no connection to them.

772. Re: QRP-linear for HW-7?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 00:44:22 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2nif56$t8l@abyss.West.Sun.COM>
Source record: 118208

In article 5oz@utu.fi, MIKSUORA@SARA.CC.UTU.FI (Suoranta, Mika Ensio) writes:
>
> HW-7 QRP-rig has output power of about 2...3 watts, depending
> on the frequency band used. This is quite enough if one has a
> proper antenna. Sometimes I do /P -operations and have to live
> with a lousy longwire... A few more watts of power to compensate
> my poor antenna would be great. Power comsumption will not be
> a problem 'cause I can use car battery.
>
> Has anyone built a small broadband amplifier to go with HW-7?
> 1..2 watts input and maybe about ten watts of output power. I
> assume this could be a simple one or two transistor project. If
> you have experience, simple plan, some "do and dont's"..let me know!
>
> 73 Mike OH1NZQ @ OH1RBU.FIN.EU
> internet miksuora@sara.utu.fi

"Solid State Design for the Radio Amateur", by DeMaw and Hayward, contains
an excellent article about this. Is this book available in Finland?

Dana

---
* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

773. Re: MuRata SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 02:25:35 UTC
From: Ding <lk107@delphi.com>
Message-ID: <Zk4tZHn.lk107@delphi.com>
Source record: 118209

Try calling A.R.E. Surplus in Findlay, OHio at (419) 422 1558, if they don't give you an answer, EMAIL me. I am sure they have some of the narrow band types. As opposed to the wider bandwith FM units.
DING

774. Re: QRP-linear for HW-7?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 13:23:02 UTC
From: jimn0oct@aol.com
Message-ID: <2njrjm$lsj@search01.news.aol.com>
Source record: 118214

In article <CnLH16.5oz@utu.fi>, MIKSUORA@SARA.CC.UTU.FI (Suoranta, Mika Ensio) writes:

>Has anyone built a small broadband amplifier to go with HW-7?
>1..2 watts input and maybe about ten watts of output power. I
>assume this could be a simple one or two transistor project. If
>you have experience, simple plan, some "do and dont's"..let me know!

73 Mike OH1NZQ @ OH1RBU.FIN.EU
internet miksuora@sara.utu.fi

If you can get your hands on it, try Solid State Design for the Radio Amateur by Haywood/DeMaw--simple amp uses an MRF-449 to put out 15 wattts.

73 de JimN0OCT

775. 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 13:44:02 UTC
From: jimn0oct@aol.com
Message-ID: <2njsr2$m2a@search01.news.aol.com>
Source record: 118215

I've just purchased a used HR-2600 10 meter rig. I would like to use transverters to get on 2m all-mode. The man who sold it to me said there was an article in either 73 or QST that described this, but I can't find it. Any help?? Thanks alot!

73 de JimN0OCT

776. Re: How To Receive Fm Subcarrier Signals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 14:48:47 UTC
From: joe@netcom.com
Message-ID: <joeCnMztC.Kuy@netcom.com>
Source record: 118216

I recently ordered and received three SCA demodulator boards from SCS Radio Technology after noticing an advertisement in Radio News. Bruce Elving's SCA design uses a CA3089 IF/detector chip and a PLL (I designed his XR2211 PLL SCA demodulator) SCA. Bruce also sells FM receivers modified with the boards.

What was interesting about the SCS SCA board design, while it uses a CA3089E IF chip also, a multipole filter in front of the 3089 decreases main channel crosstalk interference (by 60 dB). David's board is of excellent construction, with no jumpers and small size to be inserted in an FM receiver's FM detector stage (before deemphasis attenuates the SCA signals).

Anyway, three pretuned boards are available from SCS, 57Khz, 67Khz, and 92Khz - $20.00 each, $60 plus $6.00 P&H for all three. I am satisified with the design and construction of each board. One area of modification I would make is to monitor the SCA signal's multipath and level with an x-y monitor. Use pin 13 of the 3089 chip for a signal level (scope y) output and pin 7 for the y axis output. Of course levels must be set to set vertical and horizontal traces. A flat vertical line, max amplitude, is the ideal signal for tuning. A "wavy" line illustrates multipath. This is a great tool for tuning FM signals...

SCS's Address and Phone Number:

SCS Radio Technology
5742 Fairoak
Springfield, MO, 65810

Phone:

417-881-8401

He (Dave Jackway) takes checks only at present. While his focus is large-volume customers, he will sell to the small customer...

(I have no affilication with SCS, only as a satisfied customer)

--Joe Jesson

From joe Tue Nov 16 04:31:38 1993
Return-Path: <joe>
Received: from localhost by mail.netcom.com (8.6.4/SMI-4.1/Netcom) id EAA05015; Tue, 16 Nov 1993 04:31:38 -0800
From: joe (Joseph Jesson)
Message-Id: <199311161231.EAA05015@mail.netcom.com>

Subject: no subject (file transmission)
To: mhs!amoco!joseph_e_jesson@attmail.com (joe jesson), joe (Joseph Jesson)
Date: Tue, 16 Nov 93 4:31:37 PST
X-Mailer: ELM [version 2.3 PL11]
X-Status:
Status: RO

Xref: netcom.com rec.radio.scanner:1763 sci.electronics:64156
Newsgroups: rec.radio.scanner,sci.electronics
Path: netcom.com!netcomsv!decwrl!decwrl!ames!elroy.jpl.nasa.gov!swrinde!cs.utexas.edu!csc.ti.com!tilde.csc.ti.com!ra.csc.ti.com!fstop.csc.ti.com!linnig
From: linnig@m2000.dseg.ti.com (Mike Linnig)
Subject: Experiences with RAMSEY SCA Decoder
Message-ID: <LINNIG.93Nov10161459@m2000.dseg.ti.com>
Sender: usenet@csc.ti.com
Nntp-Posting-Host: m2000.dseg.ti.com
Organization: Texas Instruments, Defense, Systems and Electronics Group.
Date: Wed, 10 Nov 1993 22:14:59 GMT
Lines: 164

Folks,

I thought I'd post a little information on my experencies with the RAMSEY SCA decoder kit.

The RAMSEY SCA decoder attaches to an FM radio just after the detector and is supposed to allow you to listen to subcarrier transmissions such as Musak ("elevator music") that are broadcast with commercial FM stations.

The short summary is that my kit did not work after it was assembled. I believe that this is due to a design defect in the product. While the Ramsey documentation states that the kit can tune the full SCA frequency range, the kit has a passive input filter that is a band pass only at a particular frequency. You can tweek the tune knob all you want and that input filter will only allow a narrow band of frequencies into the SCA decoder.

The design defect is the input filter is miss tuned. A little analysis with ACS (Al's Circuit Simulator) shows that the peak response of the filter is at 53.5 Khz. That's too bad since the SCA signal is at 67 Khz. The response of the filter is down by about 40 dB at 67 KHz.

A friend of mine called Ramsey and they suggested changing three components:

C4 should be 150 pf (was 100)
C5 should be 0.003 uf (was 0.005)
C6 should be 0.003 uf (was 0.005)

This moved the peak response much closer to 67 Khz. Now my SCA can hear stations that transmit their SCA subcarrier at that frequency.

For Dallas area listners I hear audio stations on the following FM frequencies:

90.1 -- Seems to be Reading for the Blind. Someone reads local newspapers and portions seem to contain material from non-local sources. A bit

dry but I got to hear Dave Barry's column last Sunday. Might be
nice for drive time listening.

94.1 -- Elevator Music
105.3 -- Elevator Music

I also hear lots of digital signals on the SCA channel of other stations:

97.1, 99.5, 100.3, 103.7, 107.5

Does anyone know what these are? I've heard of the POCSAG and Golay pager
formats, might these stations be using these type of transmissions? Does
anyone have any pointers to the description of these formats?

Can someone tell me the standard subcarrier frequecies (besides 67 KHz) ?

-- Mike

PS. I used a PRO-2005 as my FM detector.

If anyone is interested, here are the plots of the input filter's response
(before and after being modified):

SCA DECODER --Original (in dB)

```
-50. -41.25 -32.5 -23.75 -15.
+-----------------+----------------+-----------------+----------------+
25.K * . . . |
25.882K* . . . |
26.794K* . . . |
27.739K* . . . |
28.717K* . . . |
29.73K * . . . |
30.779K* . . . |
31.864K* . . . |
32.988K* . . . |
34.151K* . . . |
35.355K* . . . |
36.602K* . . . |
37.893K* . . . |
39.229K* . . . |
40.613K* . . . |
42.045K* . . . |
43.528K* . . . |
45.063K| * . . . |
46.652K| * . . . |
48.297K| * . . . |
50.K | . * . . |
51.763K| . * . |
53.589K| . . . * |
55.478K| . . * . |
57.435K| . * . . |
59.46K | . * . . |
```

```
61.557K| . * . . |
63.728K| . * . . |
65.975K| . * . . |
68.302K| .* . . |
70.711K| .* . . |
73.204K| .* . . |
75.786K| * . . |
78.458K| .* . . |
81.225K| .* . . |
84.09K | .* . . |
87.055K| . * . . |
90.125K| . * . . |
93.303K| . * . . |
96.594K| . * . . |
100.K | . * . . |
+-----------------+----------------+----------------+----------------+
```

SCA DECODER --Improved, with 0.0033 uF capacitors for C5,C6

```
-50. -37.5 -25. -12.5 0.
+-----------------+----------------+----------------+----------------+
25.K * . . . |
25.882K* . . . |
26.794K* . . . |
27.739K* . . . |
28.717K* . . . |
29.73K * . . . |
30.779K* . . . |
31.864K* . . . |
32.988K* . . . |
34.151K* . . . |
35.355K* . . . |
36.602K* . . . |
37.893K* . . . |
39.229K* . . . |
40.613K* . . . |
42.045K* . . . |
43.528K* . . . |
45.063K* . . . |
46.652K* . . . |
48.297K* . . . |
50.K | * . . . |
51.763K| * . . . |
53.589K| * . . . |
55.478K| * . . . |
57.435K| * . . |
59.46K | . * . . |
61.557K| . * . . |
63.728K| . . * . |
65.975K| . . * . |
68.302K| . * . |
```

```
70.711K| . * . . |
73.204K| . * . . |
75.786K| . * . . |
78.458K| . * . . |
81.225K| . * . . |
84.09K | . * . . |
87.055K| . * . . |
90.125K| . * . . |
93.303K| . * . . |
96.594K| . * . . |
100.K | . * . . |
+-----------------+----------------+-----------------+----------------+
```

-- Mike, N5QAW

```
- - - - - - - - - - - - - - - - - - + - - - - - - - - - - - - - - - - - - +
Mike Linnig, Texas Instruments Inc. | 97.43% of all statistics are made |
Phone: (214) 575-3597 | up; most of them (83.6 percent) |
Internet: mike.linnig@dseg.ti.com | are wrong. |
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

From joe Tue Nov 16 04:32:33 1993
Return-Path: <joe>
Received: from localhost by mail.netcom.com (8.6.4/SMI-4.1/Netcom)
id EAA05053; Tue, 16 Nov 1993 04:32:33 -0800
From: joe (Joseph Jesson)
Message-Id: <199311161232.EAA05053@mail.netcom.com>
Subject: no subject (file transmission)
To: mhs!amoco!joseph_e_jesson@attmail.com (joe jesson), joe (Joseph Jesson)
Date: Tue, 16 Nov 93 4:32:32 PST
X-Mailer: ELM [version 2.3 PL11]
X-Status:
Status: RO

Xref: netcom.com rec.radio.scanner:1804 sci.electronics:64372
Path: netcom.com!netcomsv!terapin!djc
From: djc@terapin.com (Don Coco)
Message-ID: <djc.19lo@terapin.com>
Newsgroups: rec.radio.scanner,sci.electronics
Subject: Re: Experiences with RAMSEY SCA Decoder
References: <LINNIG.93Nov10161459@m2000.dseg.ti.com>
Date: 12 Nov 93 09:30:56 PST
Organization: Terrapin Transit BBS 510-644-9328, v32bis/HST 510-486-1537

Glad you finally got it to work Mike. The B Subcarriers are at 92 MHZ. You
may hear much the same things as you hear at 67 MHZ. You should find some
Ethnic programming as well. Can't say about the data stations but there are
quite a few of them here in the Bay Area as well. Your Reading Service for the
Blind probably broadcasts live during the day and perhaps they go to the
satelite to receive the Intouch Network from New York at night. Listen for the
id's.

djc@terapin.com Out!

From joe Tue Nov 16 04:32:46 1993
Return-Path: <joe>
Received: from localhost by mail.netcom.com (8.6.4/SMI-4.1/Netcom)
id EAA05061; Tue, 16 Nov 1993 04:32:46 -0800
From: joe (Joseph Jesson)
Message-Id: <199311161232.EAA05061@mail.netcom.com>
Subject: no subject (file transmission)
To: mhs!amoco!joseph_e_jesson@attmail.com (joe jesson), joe (Joseph Jesson)
Date: Tue, 16 Nov 93 4:32:45 PST
X-Mailer: ELM [version 2.3 PL11]
X-Status:
Status: RO

Xref: netcom.com rec.radio.scanner:1792 sci.electronics:64269
Path: netcom.com!netcomsv!decwrl!olivea!charnel!yeshua.marcam.com!news.kei.com!eff!usenet.
ins.cwru.edu!howland.reston.ans.net!cs.utexas.edu!hermes.chpc.utexas.edu!news.utdallas.edu
!corpgate!crchh327.bnr.ca!crchh549.bnr.ca!not-for-mail
From: sdejour@bnr.ca (Stewart DeJournett)
Newsgroups: rec.radio.scanner,sci.electronics
Subject: Re: Experiences with RAMSEY SCA Decoder
Date: 12 Nov 1993 07:57:34 -0600
Organization: Bell-Northern Research, Richardson, TX
Lines: 70
Message-ID: <2c04oe$a3o@crchh549.bnr.ca>
References: <LINNIG.93Nov10161459@m2000.dseg.ti.com>
NNTP-Posting-Host: crchh549.bnr.ca

In article <LINNIG.93Nov10161459@m2000.dseg.ti.com>,
Mike Linnig <linnig@m2000.dseg.ti.com> wrote:
>The short summary is that my kit did not work after it was assembled. I
>believe that this is due to a design defect in the product. While the Ramsey
>The design defect is the input filter is miss tuned. A little analysis with
>ACS (Al's Circuit Simulator) shows that the peak response of the filter is at
>53.5 Khz. That's too bad since the SCA signal is at 67 Khz. The response of
>the filter is down by about 40 dB at 67 KHz.
>
>A friend of mine called Ramsey and they suggested changing three components:
>
> C4 should be 150 pf (was 100)
> C5 should be 0.003 uf (was 0.005)
> C6 should be 0.003 uf (was 0.005)
>
>This moved the peak response much closer to 67 Khz. Now my SCA can hear
>stations that transmit their SCA subcarrier at that frequency.

I would like to hear from Mike if the quality of the decoded sound was
acceptable after the mods were made. I ran the Ramsey ciruit thru P-Spice
and got the same results 40Db down at 67Khz and a bandpass to boot. I
wanted to hear some siganls in Dallas at 92Khz so I redesigned the BP filter
to pass 92Khz but the quality was BAD. I have an old SWTP SCA decoder from

the 70's using the 565 as well and it sounds better.

My question is the circuit did NOT work as put out and you have to change components to do so so why is RAMSEY putting out a BAD board and selling it for $25 in kit form. I finally went out and bought an assembled SCA from SCS radio for $20 ASSEMBLED 5 bucks less and no assembly and the sound quality is good!! See review below for details:

From: joe@netcom.com (Joseph Jesson)

I recently ordered and received three SCA demodulator boards from SCS Radio Technology after noticing an advertisement in Radio News. Bruce Elving's SCA design uses a CA3089 IF/detector chip and a PLL (I designed his XR2211 PLL SCA demodulator) SCA. Bruce also sells FM receivers modified with the boards.

What was interesting about the SCS SCA board design, while it uses a CA3089E IF chip also, a multipole filter in front of the 3089 decreases main channel crosstalk interference (by 60 dB). David's board is of excellent construction, with no jumpers and small size to be inserted in an FM receiver's FM detector stage (before deemphasis attenuates the SCA signals).

Anyway, three pretuned boards are available from SCS, 57Khz, 67Khz, and 92Khz - $20.00 each. I am satisified with the design and construction of each board. One area of modification I would make is to monitor the SCA signal's multipath and level with an x-y monitor. Use pin 13 of the 3089 chip for a signal level (scope y) output and pin 7 for the y axis output. Of course levels must be set to set vertical and horizontal traces. A flat vertical line, max amplitude, is the ideal signal for tuning. A "wavy" line illustrates multipath. This is a great tool for tuning FM signals...

SCS's Address and Phone Number:

SCS Radio Technology
5742 Fairoak
Springfield, MO, 65810

Phone: 417-881-8401
800-944-0630

(I have no affilication with SCS, only as a satisfied customer)

--Joe Jesson

From joe Tue Nov 16 04:33:30 1993
Return-Path: <joe>
Received: from localhost by mail.netcom.com (8.6.4/SMI-4.1/Netcom)
id EAA05085; Tue, 16 Nov 1993 04:33:30 -0800
From: joe (Joseph Jesson)
Message-Id: <199311161233.EAA05085@mail.netcom.com>
Subject: no subject (file transmission)
To: mhs!amoco!joseph_e_jesson@attmail.com (joe jesson), joe (Joseph Jesson)
Date: Tue, 16 Nov 93 4:33:29 PST

X-Mailer: ELM [version 2.3 PL11]
X-Status:
Status: RO

Xref: netcom.com rec.radio.scanner:1838 sci.electronics:64493
Path: netcom.com!csus.edu!wupost!howland.reston.ans.net!usenet.ins.cwru.edu!mayhem!jacob
From: jacob@mayhem.cwru.edu (Jacob DeGlopper)
Newsgroups: rec.radio.scanner,sci.electronics
Subject: Re: Experiences with RAMSEY SCA Decoder
Date: 15 Nov 93 03:17:00 GMT
Organization: Case Western Reserve University, Cleveland, Ohio
Lines: 21
Distribution: na
Message-ID: <jacob.753333434@mayhem>
References: <CGID7L.M2F@westford.ccur.com>
NNTP-Posting-Host: mayhem.student.cwru.edu
X-Newsreader: NN version 6.5.0 #3 (NOV)

In <CGID7L.M2F@westford.ccur.com> mod@westford.ccur.com (Michael O'Donnell) writes:

>>I also hear lots of digital signals on the SCA channel of other stations:
>>
>> 97.1, 99.5, 100.3, 103.7, 107.5
>>
>>Does anyone know what these are? I've heard of the POCSAG and Golay pager
>>formats, might these stations be using these type of transmissions? Does
>>anyone have any pointers to the description of these formats?

There's all sorts of digital information coming back on SCA channels. We
use our SCA for remote transmitter metering; it's Bell 103 300 baud between
a pair of computerized boxes.

There's SCA paging, there's the stock data service someone mentioned,
and all sorts of other stuff.
--
Jacob DeGlopper, EMT-A | Case Western Reserve University
jacob@mayhem.cwru.edu | Wheaton (MD) Volunteer Rescue Squad
deglop@snowhite.cwru.edu | Technical Director, WRUW-FM Cleveland
+1 216 754 1638 | Opinions my own...

From astroman Sun Nov 21 07:23:54 1993
Return-Path: <astroman>
Received: from localhost by mail.netcom.com (8.6.4/SMI-4.1/Netcom)
id HAA01383; Sun, 21 Nov 1993 07:23:54 -0800
Date: Sun, 21 Nov 1993 07:23:54 -0800
From: astroman (SignalMan)
Message-Id: <199311211523.HAA01383@mail.netcom.com>
To: joe
Subject: Re: Experiences with RAMSEY SCA Decoder
X-Status:
Status: RO

Ah..OK..good! Does an oscilloscope work as well as a real
x-y monitor? Its would be interesting to feed the multipath
axis signal to a vco and have a tone that dances to the
tune of the MP! :)

Im on netcom also as is obvious, and if you ever have the
time and that sort of forum would be more appropriate
than mail, im open to chat mode. You talk ill listen!
It is really nice to find another enthusiast of such
a specialized facet of radio and measurment.

Mike

--

Joseph Jesson joe@netcom.com Day (312) 856-3645 Eve (708) 356-6817
21414 W. Honey Lane, Lake Villa, IL, 60046
---

777. surface mnt BF999-looking for!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-02 17:52:20 UTC
From: ed976@cleveland.Freenet.Edu
Message-ID: <2nkbck$ld1@usenet.INS.CWRU.Edu>
Source record: 118217

Hi and thanks for reading this.....I have a htx-202 which is in
need of a first stage rf fet, surface mount sot-23 style, number
BF999. Any clues where I could get a replacement? (darn hamfest
bargains!) the rig works but is a little hard of hearing....any
suggestions would be appreciated!
73's, Rusty
please reply via e-mail or packet call is WB8VOW.
--
~~~~~~
Rusty Irons WB8VOW ed976@cleveland.freenet.edu
"Imagination is more important than knowledge" Albert Einstein
~~~~~~

778. ** FLEA at MIT ** Sunday 17 April Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 03:25:50 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <2nlcvu$4l2@senator-bedfellow.MIT.EDU>
Source record: 118127
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

Spring has sprung .. so it's time to start again

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April 17th, 1994
9AM-2PM

Come to the city for a great flea - plenty of free parking.

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place on the third Sunday of each month this summer,
April thru October.

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Buyers admission is $2 (you get $1 off if
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and sellers spaces are $10.00-each at the gate.

The flea will be held at the corner of Albany and
Main streets in Cambridge; right in the Kendall
Square area from 9AM to 2PM, with sellers set-up
time starting at 7AM.

!! RAIN or SHINE !! Have no fear of rain, a covered
tailgate area is available for all sellers (6'8" clearance).

Talk-in: 146.52 and W1XM/R-449.725/444.725 (PL 114.8/2A).

Sponsors: MIT Electronics Research Society
MIT UHF Repeater Association (W1XM)
MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ************

****
Steve Finberg W1GSL w1gsl@athena.mit.edu
PO Box 82 MIT Br Cambridge MA 02139 617 258 3754
****

779. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 03:49:06 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2nlebi$j53@hpscit.sc.hp.com>
Source record: 118128

In article <2ng30c$g7r@crl2.crl.com>, Donald J. Miller <dmiller@crl.com> wrote:
>
>You can NOT reall draw an equivilence between BPSK and ASK since a "1"
>and a "0" have the same amplitude -- a diode detector cannot tell the
>two apart. There is no quadrature component transmitted, so 2QAM would
>not be appropriate either :)
>--
>~~ dmiller@crl.com ~~~~~~

The difference is in the transitions. With BPSK, the envelope remains constant
and the phase rotates from 0 to 180 degrees. With ASK, the amplitude ramps
down to zero while at 0 degrees phase, then the amplitude ramps back up to
full amplitude while at 180 degrees. A diode detector with a Nyquist pulse
shaping network in front of it can definitely tell the difference. Only
the mode the filter was designed for will result in zero intersymbol
interference.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

780. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 03:56:53 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2nleq5$jcu@hpscit.sc.hp.com>
Source record: 118118

In article <2nhhfg$g5e@usenet.ins.cwru.edu>,
Stephen C. Trier <trier@slc6.ins.cwru.edu> wrote:
>While this is fascinating, you are all going way over my head. (The
>exception is the discriminator suggestion -- I understood that.) Can
>anyone suggest a good book from which I could figure out how these
>demodulators work?

I think I have spend enough time researching this topic that I
can state with 99% certainty that there is no single book or paper that
describes exactly how to build a well designed BPSK demod, let alone
a QPSK demod.

Communications theory books (see Feher's books) show general block
diagrams of such things but leave out the critical practical
considerations. You have to figure those out on your own.
John Bingham's book on modem design goes into a little bit more detail
than most books, but it's no cookbook. The few hobbyist magazine BPSK designs
I have seen were very poor, although they will work after a fashion
if you fool with them enough.

>Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
>Other: trier@ins.cwru.edu certain je ne sais quois."
>Home: sct@po.cwru.edu - Peter Schickele

Rick Karlquist N6RK
rkarlqu@scd.hp.com

781. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 04:13:34 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2nlfpe$49k@usenet.INS.CWRU.Edu>
Source record: 118119

For what it's worth, I found the answers I needed in the following:

Gardner, Floyd; _Phaselock Techniques_, second edition; Wiley and
Sons, New York; 1979. ISBN 0-471-04294-3. LC TK7872.P38G37 1979.

It's a good book.

Thanks for the help.

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quois."
Home: sct@po.cwru.edu - Peter Schickele

782. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 13:31:53 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr3.133153.16429@ke4zv.atl.ga.us>
Source record: 118120
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <CnJrA3.1I3@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
[chart deleted]
>: Now this chart illustrates the problem I've been talking about. As
>: we can see, the difference in delay with frequency is quite marked.
>: Sure the phase delay increases *smoothly* with frequency delta, but
>: the magnitude of the error rapidly climbs with increasing frequency
>: delta. This is our old friend click-boom. ...
>
>Other people besided Gary may be confused by this, so I'll post an
>explanation.

I'm not confused. I calculated the delays based on the graph you posted.
Delay equals the reciprocal of frequency times the total phase delay in
degrees divided by 360.

>The graph above plots phase, not delay. A constant delay results in
>a constantly-rising phase plot. For example, a 1 millisecond delay
>is 36 degrees at 100 Hz, 360 degrees at 1000 Hz, 3600 degrees at
>10,000 Hz, etc.

Yeah, but that isn't what your graph showed.

>While the plot above looks like a straight line, it really isn't because
>of the logarithmic x-axis.

Bingo! I check plotted it on semi-log paper then replotted on a linear
graph from which I calculated my differential delay numbers.

>However, as the chart that Tom Bruhns posted of
>a typical phase-shift network shows, it really isn't too bad. His chart
>shows that between 400 and 2786 Hz, the maximum phase error from a straight
>line varies smoothly between +17.2 to -20.9 degrees, which is far better
>than you would get with a typical transceiver-type crystal filter.

As I commented, his table looked much better than your graph, and I
calculated differential delays based on it too that were nearly 10
times smaller. It's just that I've seen phase plots for crystal and
mechanical filters which, *away from the edges*, where Tom's table
looked bad too, looked at least as good as Tom's phase shifter. And
note also that the network Tom modelled is not "typical", it is
considerably more complex than the traditional Dome based networks.
They tend to really suck in the differential delay department because
they're based on the same simple semi-log response as your graph. I
don't think he included an AF pre-filter in the table either.

I'll readily agree that the receiver type filters used in many ham rigs for SSB transmit signal generation, suck wind. But that's a different issue. Good filter designs are available, as witness filters we use for VSB video, and in certain telco FDM equipment that have a maximally flat phase response in the passband. We simply can't tolerate differential delay in video systems, yet we use filters instead of phasing to generate VSB signals. It's not a matter of economy, it's what works best.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

783. Antique radio and gramophone restoration

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 14:53:47 UTC
From: ball@qut.edu.au
Message-ID: <1994Apr4.005347.67556@qut.edu.au>
Source record: 118121

An acquaintance of mine is involved in restoration and repair of antique radios, gramophones and telephones. I've tried to find a relevant mailing list on this subject without success. If anyone knows a suitable mailing list, ftp/gopher sites or any other Internet resources on the topic, could you please let him know via e-mail (he doesn't have access to News).

His address is:

PJones@QCAGMAYN.TELECOM.com.au (Paul Jones)

Thanks in advance,
Tony
ball@qut.edu.au

784. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 15:28:58 UTC
From: dmiller@crl.com
Message-ID: <2nmnbq$iel@crl.crl.com>
Source record: 118122

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: The difference is in the transitions. With BPSK, the envelope remains constant
: and the phase rotates from 0 to 180 degrees. With ASK, the amplitude ramps
: down to zero while at 0 degrees phase, then the amplitude ramps back up to
: full amplitude while at 180 degrees. A diode detector with a Nyquist pulse

Once again: it is NOT necessary for PSK to have a constant envelope.
If you disagree with this, go talk to one of your HP friends that are
working on the test equipment for North American digital cellular.
NADC is Pi/4 DQPSK and it does NOT have a constant envelope. Folks
have, and continue to ship what they call BPSK systems that fall
under your definition of ASK. To be consistant with your stand that
ONLY the phase changes in PSK, one would conclude that only the
amplitude changes in ASK, right? A phase change at the zero crossings
would not be allowed. It has always been my impression that ASK
was like sending data into an AM modulator -- complete with the
offset so that over 100% modulation was avoided. It should be
possible to get NRZ data directly from an envelope detector without
playing transition games.

Vendors such as Alpha Industries produce "Bi-Phase modulators" as
standard products for implementation in BPSK modulators. These products
have NO Q CHANNEL INPUT, so it would be impossible to generate a
constant envelope signal with them.

This "symantic nit" has turned into a rather lively discussion, it
would appear. I have checked the books at my disposal and can't
really find any that have drawn the lines between modulation formats
in the manner you describe. What sources have led you to these
conclusions? I would like to check into them.

--
~~ dmiller@crl.com ~~~~~~
~ Don Miller > Opinions expressed here < "They will never forget you ~
~ ESP, Inc. > are my own! < till somebody new comes along"~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ -->The Eagles<-~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

785. Re: <none>

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 17:00:30 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2nmsne$4rl@usenet.INS.CWRU.Edu>
Source record: 118123
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <03APR94.14736203.0178@unbvm1.csd.unb.ca>,
NADO000 <NADO@UNB.CA> wrote:
>Our question is: Is the DC ouput sufficiently regulated to provide
>clean RF output out of a radio?

That depends on the details of the supply. You might need to add some
extra supply filtering to get rid of a ~15 kHz switching whine.

An issue that should be of more concern is the voltage and current
ratings. A 200 Watt supply may not be able to supply all of that power
at 12V. A typical PClone supply can put out 35 amps or so at 5V,
perhaps 1.2 A at +12V and 1A at -12V, and a couple hundred milliamps at
-5V. This would be a poor match for a linear amplifier that wants 20
amps or more at 12V. If your supply is something weird that puts out
gobs of power at 12V, perhaps it is a good match. That is unlikely.

A computer supply can reasonable for other purposes. QRP rigs can run
off the 12V 1A output of a PClone power supply. Put an appropriately
sized resistor across the +5V line or else the supply might not be loaded
enough for good regulation.

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quois."
Home: sct@po.cwru.edu - Peter Schickele

786. <none>

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 17:38:40 UTC
From: NADO000 <NADO@UNB.CA>
Message-ID: <03APR94.14736203.0178@UNBVM1.CSD.UNB.CA>
Source record: 118124
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

We are trying to make a regulated power supply (suitable for Tx) out of a computer power supply. It is made by RW, a German manufacturer, called a PC40 power supply, that will take 110-240 volts, rated at 220 Watts (Part # 380708-02)

Our question is: Is the DC ouput sufficiently regulated to provide clean RF output out of a radio? Also, can one bank two of these power supplies in parallel and use the combined output (400 W) to drive a linear amplifier?

Tnx in advance

Luis Nadeau, VE9LN

787. Re: advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 18:22:06 UTC
From: bobw@col.hp.com
Message-ID: <2nn1ge$kn7@hp-col.col.hp.com>
Source record: 118125

A Cotton (acotton@cs.uct.ac.za) wrote:
: Hi Everyone.

: I'm looking for advice from someone knowledgable in radio and electronics.
: A normal f.m radio recieves up to about 108 Mhz.
: Does anyone know how to adjust it to recieve from 108 to about 130 Mhz?
: These are the aircraft frequencies and it'd be cool to listen in. I've
: heard that it's quite a simple operation involving a small adjustment in
: any cheap f.m reciever.
: Any advice is very welcome. Remember I'm a very non-specialist audience
: here, so please keep it simple.
: I'd appreciate mail in this regard.
: Thanks-

: -- Ari Cotton.

I think other posters have pointed out that this will NOT be a simple mod.
There are many cost-effective solutions to listening to the aircraft band
if that is the goal here. Check your local Radio Shack catalog.

Bob Witte / bobw@col.hp.com / Hewlett Packard PMO / KB0CY / (719) 590-3230

788. Re: advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-03 22:24:25 UTC
From: tstrohma@theodolite.ae.calpoly.edu
Message-ID: <1994Apr3.222425.14611@cs.yale.edu>
Source record: 118126

In article <2nn1ge$kn7@hp-col.col.hp.com>, Bob Witte <bobw@col.hp.com> wrote:
>
> I think other posters have pointed out that this will NOT be a simple mod.
> There are many cost-effective solutions to listening to the aircraft band
> if that is the goal here. Check your local Radio Shack catalog.
>

Why? If it's an analog FM radio, couldn't you put an inductor or
capacitor in series with the tuning system to change the frequency, or
am I way off?

--
Trevor Strohman | Audio/Amateur Radio/Programming
tstrohma@theodolite.ae.calpoly.edu | Running/Cycling/Studying/Sleeping...

789. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 00:36:36 UTC
From: rohrwerk@zen.holonet.net
Message-ID: <CnpLp2.H0G@iat.holonet.net>
Source record: 118129
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In any event, if the receiver is a transceiver, and it uses
>the same filter for receive and transmit, then all the nasty
>ripples you avoided with a phasing type transmitter will
>be reintroduced at the receiver. So you really need a phasing
>transmitter and phasing receiver to get "hi-fi" audio. Or

Like the Campbell R2 receiver, Jan. 1993 QST! For whatever combination of reasons, it IS a clean sounding unit. I'll bet his companion phasing SSB exciter sounds just as good.

John K0JD

790. Weather Observations

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 05:43:06 UTC
From: cq068@cleveland.Freenet.Edu
Message-ID: <2no9da$bu3@usenet.INS.CWRU.Edu>
Source record: 118130

Any other operators interested in weather observations and radio
such as condtions by voice/packet? Is there an organized group that
is involved in this?

Let me know. Drop me a line with thoughts and comments.

Steven Lapinskas
KA1JJA
cq068@cleveland.freenet.edu

791. HyGain 204 Antenna Dimensions ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 15:05:54 UTC
From: drs@ccd.harris.com
Message-ID: <1994Apr4.150554.16935@ccd.harris.com>
Source record: 118131

I am thinking about making my HyGain 203 a 204 (1 more element). I would appreciate a copy of the dimensions from the 204 manual. The element/boom dimensions and the parts list. I would appreciate no flames telling me to get this from HyGain as I know I can. I don't want to wait that route as they can be slow at times.

--

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |

1590 Oakfield Avenue SE
Palm Bay, Florida 32909

792. Re: How to do PSK demodulation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 16:49:25 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2npgel$eo4@hpscit.sc.hp.com>
Source record: 118132

In article <2nmnbq$iel@crl.crl.com>, Donald J. Miller <dmiller@crl.com> wrote:
>
>Once again: it is NOT necessary for PSK to have a constant envelope.
>If you disagree with this, go talk to one of your HP friends that are
>working on the test equipment for North American digital cellular.
>NADC is Pi/4 DQPSK and it does NOT have a constant envelope. Folks

As I said, this is a semantic discussion. I don't agree with their
terminology, that's all.

>have, and continue to ship what they call BPSK systems that fall
>under your definition of ASK. To be consistant with your stand that
>ONLY the phase changes in PSK, one would conclude that only the
>amplitude changes in ASK, right? A phase change at the zero crossings
>would not be allowed. It has always been my impression that ASK

I am allowing "negative" amplitudes, so 180 degree phase shifts
(and only 180 degree phase shifts) are allowed in my definition of
ASK. Again, my definition.

>was like sending data into an AM modulator -- complete with the
>offset so that over 100% modulation was avoided. It should be
>possible to get NRZ data directly from an envelope detector without
>playing transition games.

The envelope detector cannot distinguish negative from positive
polarity so it doesn't work here.

>Vendors such as Alpha Industries produce "Bi-Phase modulators" as
>standard products for implementation in BPSK modulators. These products
>have NO Q CHANNEL INPUT, so it would be impossible to generate a
>constant envelope signal with them.

A true phase modulator should have only one input, "phase".
What I don't know about that specific one is if the phase port is
linear or digital. Modulators with I and Q inputs are for QAM.

To produce true BPSK, as I define it, take your NRZ data, run it
through a finite bandwidth pulse shaping filter, and then run it
into a linear, *analog* phase modulator (with no ideal switches).

To produce true ASK, as I define it, take your NRZ data, run it
through a finite bandwidth pulse shaping filter, and then run it
into a linear, *analog* bipolar amplitude modulator (a double balanced
mixer for example). If you don't like the bipolar aspect, bias
the data so it is unipolar.

As the bandwidth goes to infinity, the systems become more and
more alike.

If you don't watch what you're doing, you can easily get a combination of
the two with neither constant envelope nor constant (absolute value of)
phase. For example, following a BPSK modulator with a bandpass filter
produces AM via PM/AM conversion. Moral, do all filtering at baseband.
(That comment ought to produce so controversy!).

>This "symantic nit" has turned into a rather lively discussion, it
>would appear. I have checked the books at my disposal and can't
>really find any that have drawn the lines between modulation formats
>in the manner you describe. What sources have led you to these
>conclusions? I would like to check into them.

Essentially, these are my own ideas; you won't find any real discussion
of this in books, as far as I know. You'll just have to keep reading
Usenet to keep up :-) I have read every book I could
get my hands on about this subject, and they all gloss over the
details of implementation. As I said in another posting, try Feher's
books and John Bingham's book on modem design for starters.
(Ever notice how you never see a *schematic* in those communications
theory books, only block diagrams.)

>~~ dmiller@crl.com ~~~~~~

Rick Karlquist N6RK
rkarlqu@scd.hp.com

793. Re: advice fm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 18:31:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940404183118OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 118136

>That's not the problem. You can easily shift the tuning to cover the
>required range, but broadcast FM is 75 kHz deviation FM while aircraft
>transmissions are AM. So you have to build a different detector, and
>get rid of the limiter in the FM receiver to demodulate AM properly.
>It'll still be noisy because the IF bandwidth is way too wide, 200 kHz
>instead of 12 kHz, but it will sort of work after you redesign about
>half the radio. On the other hand, a purpose built aircraft band AM
>receiver isn't expensive.

I've retuned a cheap AM-FM portable to the aircraft band. It
sortof works, the sounds is low but audible, the wide bandwidth
brings in lots of noise and the tuning is picky (but the wide
bandwidth helps with the tuning).

Apparently the cheap FM detector does respond to AM.

I retuned the front end -- mainly changed the RF OSC coil to have
fewer turns. I think it tunes from the high end of the FM
broadcast band to somewhere slightly above the 2 meter band. I
also twisted the adjustments in the IF cans for peak output.
Probably narrowed the IF a bit (but not anywhere near enough).

PS: Very few 2 meter stations are actually audible.

794. Power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 19:55:55 UTC
From: mortense@matt.ksu.ksu.edu
Message-ID: <2nprcb$iq1@matt.ksu.ksu.edu>
Source record: 118133

Hi:

I want to make a power meter to measure signals in the -30 to +30 dBm
range. I would like the measurements to be fairly accurate. I'm thinking
about using a diode detector. Does anyone have any suggestions for
doing this. Any comments or references would be welcome.

thanks,
nam

mortense@matt.ksu.ksu.edu

() When all you have is a hammer ...
########======||
... everything looks like a nail!

795. RADIOKIT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 20:41:29 UTC
From: owens@stout.atd.ucar.edu
Message-ID: <2npu1p$979@ncar.ucar.edu>
Source record: 118134

Has anyone done business with a company called RADIOKIT
recently?

I have not seen any advertising from them in the last few
years.....They used to carry some useful parts for homebrew
projects as well as a line of kits.

Any info on current phone number for them and/or your
experience with them would be appreciated.

Thanks!

Chip Owens, NW0O
Boulder, CO

--
Chip Owens (owens@stout.atd.ucar.edu)
NW0O (boatanchors forever!)

796. G QRP CLUB AT DAYTON

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-04 22:17:06 UTC
From: g3rjv@gqrp.demon.co.uk
Message-ID: <765497826snz@gqrp.demon.co.uk>
Source record: 118135

```
Attention Homebrewers Going to Dayton >>>>
You are invited to attend the Forum:
-------------------------------------------------------------------------
Building Your Own Equipment : George Dobbs G3RJV & Rob Mannion G3XFD
Friday April 29 - 1515 to 1645 - Room 2
-------------------------------------------------------------------------
and to join us at the G QRP Club Booth with its selection of Kits,
Publications and QRP related items
Much of it designed for the homebrewer
.................. and a few English voices
--
George Dobbs G3RJV
G-QRP Club
```

797. re: radiokit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-05 19:28:58 UTC
From: khowland@foxboro.COM
Message-ID: <QDA191CB@kxh356>
Source record: 118137

ADDRESS: RADIOKIT
P. O. BOX 973
PELHAM, N. H. 03076

TELE # 603-635-2235
FAX 603-635-2943

HOPE THIS HELPS YOU ... THIS INFO IS ABOUT 6 MONTHS OLD..

798. Re: QRP-linear for HW-7?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-05 21:51:40 UTC
From: cleveland@gvg47.gvg.tek.com
Message-ID: <cleveland.1115970340C@gold>
Source record: 118138

In Article <2njrjm$lsj@search01.news.aol.com>, jimn0oct@aol.com (JimN0OCT)
wrote:
> >Has anyone built a small broadband amplifier to go with HW-7?

There was an article entitled "Slippers for the HW-7" published in
QST manu years ago. Perhaps someone could supply a copy.

****
* Grover Cleveland WT6P@KE6LW.#NOCAL.CA *
* Instructional Designer v(916) 478-3153 *
* The Grass Valley Group Inc. - A Tektronix Company f(916) 478-3831 *
* Grass Valley, California DoD 7388 *
****

799. Any Homebrew Amiga Packet TNC's?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 03:14:32 UTC
From: maniac@halcyon.halcyon.com
Message-ID: <2nt9eo$psl@nwfocus.wa.com>
Source record: 118139

Hey is there any home brew packet controllers out there for the amiga I know there's a C64 and PC version but what about amiga?? For that matter if your a ham with an Amiga please send me mail..

800. Re: PIN diodes cause IMD in front end?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 09:08:50 UTC
From: blair@mksol.dseg.ti.com
Message-ID: <1994Apr6.090850.9272@mksol.dseg.ti.com>
Source record: 118140

Roger Traylor (rlt@ssd.intel.com) wrote:
: My question is: if PIN diodes are used to switch between different sets
: of bandpass filters will they cause increased IMD at typical (not
: pathological) signal levels?

I dont know what frequencies you're dealing with but below
1 GHz PIN diode switches do indeed generate intermod spurs.
I'm working from memory here, but as I recall, a typical
switch has a 3rd order 2 tone intercept point of about +40 dBm.
Above 1 GHz the intercept goes up so much it can be ignored.
Art.

801. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 09:11:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr6.091104.406@ke4zv.atl.ga.us>
Source record: 118141

In article <1994Apr3.022456.11057@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>JimN0OCT (jimn0oct@aol.com) wrote:
>: I've just purchased a used HR-2600 10 meter rig. I would like to use
>: transverters to get on 2m all-mode. The man who sold it to me said there was
>: an article in either 73 or QST that described this, but I can't find it. Any
>: help?? Thanks alot!
>
>There was one in 73 a few years ago but I wouldn't recommend you build
>it.
>
>The ARRL Handbook has a 2M transverter for several years. I've heard
>rumors that the Packrats are working on an improved one--probably with
>better transmit IMD, but it may be a while before this design is
>available. (Packrats--W3CCX is the club call)

The most robust easily duplicated design currently in print is the
Suffolk design in the RSGB book _The VHF/UHF Dx Book_. Chapter 8
includes a good discussion of why certain tradeoffs are made in
transverter design.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

802. Resistant modulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 11:29:05 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.765631745@bauv106>
Source record: 118142

Sometime ago, I have read about a project and the related paper,
which had the goal to determine the resistance of various modulation
methods against some sources of noise and interference. Unfortunatly
I do not remember the reference.

Can you help me, please ?

Many thanks.
--
Claude F. (claude@bauv106.bauv.unibw-muenchen.de)

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

803. CTCSS unit - any idea ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 12:26:22 UTC
From: elendir@enst.fr
Message-ID: <2nu9pe$bi7@cismsun.univ-lyon1.fr>
Source record: 118143

Hello,
I'm planning to build a V/UHF QRP rig, just for repeater usage. However,
I was wondering if any CTCSS IC was unleashed in the market, because I know
about DTSS tones, but CTCSS is another story :(

Thanks !
Vince.

--
PSG --- Paris SG football club. | Ham radio call : F1RCS

ENST - Ecole Nationale Superieure des Telecommunications, Paris, France

804. Re: PIN diodes cause IMD in front end?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 12:36:55 UTC
From: zlau@arrl.org
Message-ID: <1994Apr6.123655.5528@arrl.org>
Source record: 118144

Roger Traylor (rlt@ssd.intel.com) wrote:

: I am building a front end for a multiband receiver. It will
: consist of two poles of bandpass filtering followed by a grounded
: gate JFET amp, followed by another two poles of filtering.

: My question is: if PIN diodes are used to switch between different sets
: of bandpass filters will they cause increased IMD at typical (not
: pathological) signal levels?

I found that cheap 1N4148 switching diodes can deliver adequate 3rd order
IMD performance at 2 meters--I measured an input intercept in excess of
+56 dBm. Loss wasn't a factor in the application, but its probably
a dB or two. It was biased with about 10 volts and 520 ohms of series
resistance. However, I didn't measure the 2nd order intercept point, which
might be more of a factor on HF receiver than a microwave IF radio.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

805. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 13:52:31 UTC
From: chrise@comtrol.com
Message-ID: <CnuBvM.B2H@comtrol.com>
Source record: 118145

In article <1994Apr3.022456.11057@arrl.org>,
Zack Lau (KH6CP) <zlau@arrl.org> wrote:
>JimN0OCT (jimn0oct@aol.com) wrote:
>: I've just purchased a used HR-2600 10 meter rig. I would like to use
>: transverters to get on 2m all-mode. The man who sold it to me said there was
>: an article in either 73 or QST that described this, but I can't find it. Any
>: help?? Thanks alot!
>
>There was one in 73 a few years ago but I wouldn't recommend you build
>it.
>
>The ARRL Handbook has a 2M transverter for several years. I've heard
>rumors that the Packrats are working on an improved one--probably with
>better transmit IMD, but it may be a while before this design is
>available. (Packrats--W3CCX is the club call)
>

I believe DownEast Microwave now offers a 2m transverter.. in fact, two
of them... one intended as an intermediate IF between an HF rig and a
no-tune microwave transverter and the other a higher power 2m "final"/
"frontend".

Unfortunately, I don't have DEM's number handy... but I'm sure you can find
their ad in 73, QST or someone else will surely post it here.

What I'd like to know-- is if the mentioned HR-2600 can be modified for
26 to 30 MHz coverage.. or is it likely to be potted with goo that prevents
you from getting to the appropriate jumpers, diodes or whatever. Very early
models were modifiable I understand... but recent ones were supposedly
potted. I've never seen one myself...

cje

--
Chris Elmquist, N0JCF voice: (612)631-7614
chrise@comtrol.com fax: (612)631-8117

806. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 15:18:56 UTC
From: tomb@lsid.hp.com
Message-ID: <CnuFvL.8tq@hpcvsnz.cv.hp.com>
Source record: 118146
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Now this is much better. The ends are horrible of course, but in the
: region 600-2400 Hz there is only a delay delta of 0.014 ms. That's
: hardly audible at all to someone with *good* ears.

For some points in my table, I get the following approximate group
delays:

Freq, Hz Group Delay, ms
200 1.09
400 0.57
800 0.31
1600 0.15
3200 0.07

Dunno how Gary got 14 microseconds; you'd have to have better-than-
golden ears to hear that, from reports I've seen. Anyway, the numbers
in the table above are from

group-delay (seconds) = d(phase [radians])/d(frequecy [radians/sec])

As expected, they go essentially inversely with frequency.

: I'd note that this
: matrix phase shift network is considerably more complex than typical
: networks found in older phasing type equipment. And as Richard Karlquist

I recall having the values used in the B&W phase shift network around
somewhere, but couldn't find them. I wanted to put that into Spice
originally, cuz it would have been a lot simpler than that "matrix"
network. Can someone supply the values? I'd be happy to run them
for comparison.

807. Re: RADIOKIT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 16:17:21 UTC
From: jchappel@sanders.lockheed.com
Message-ID: <jchappel.8.765649035@sanders.lockheed.com>
Source record: 118159

In article <2npu1p$979@ncar.ucar.edu> owens@stout.atd.ucar.edu (Chip Owens) writes:
>From: owens@stout.atd.ucar.edu (Chip Owens)
>Subject: RADIOKIT
>Date: 4 Apr 1994 20:41:29 GMT

>Has anyone done business with a company called RADIOKIT
>recently?

>I have not seen any advertising from them in the last few
>years.....They used to carry some useful parts for homebrew
>projects as well as a line of kits.

>Any info on current phone number for them and/or your
>experience with them would be appreciated.

RadioKit is owned by KM1H in NH, Karl. Not sure how active he is but you
should be able to find him in the SAM or other database and drop him a
note. Think that he is more into repairing high power linear amps these
days than anything else......you probably will find him poking around the
Rochester Hamfest next month.

73
===
|~~~~~~|
| Joel B. Chappell - KC1SG Lockheed Sanders |
| Principal Engineer Nashua, NH 03061 |
| |
| -= Standard Disclaimer: All opinions are mine. =- |
| |
| jchappel@rapnet.sanders.lockheed.com |
| Fido: 1:132/204.1 |
| |
~~~~~~
~~~~~~

808. IR remote control

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 18:16:06 UTC
From: hunter@s07.es.llnl.gov
Message-ID: <2nuu96$j8c@lll-winken.llnl.gov>
Source record: 118147

I would like to make a remote control for a project. I just want to send numbers from the remote to the project. My TV remote control has proprietary parts. Are their any parts available for simple IR remote control transmitters and receivers?

Steven Hunter KC6RKV

809. Re: PIN diodes cause IMD in front end?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 19:19:16 UTC
From: alanb@sr.hp.com
Message-ID: <Cnur05.lw@srgenprp.sr.hp.com>
Source record: 118148

Roger Traylor (rlt@ssd.intel.com) wrote:

: My question is: if PIN diodes are used to switch between different sets
: of bandpass filters will they cause increased IMD at typical (not
: pathological) signal levels?

It depends on the PIN diode. The longer the carrier lifetime, the
more it acts like a resistor and the less like a diode. PIN diodes
designed for microwave applications often have short carrier lifetimes
(to allow fast switching), so they cause lots of distortion at
lower frequencies.

AL N1AL

810. Re: Power meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 19:55:38 UTC
From: markb@hpcss01.cup.hp.com
Message-ID: <106470006@hpcss01.cup.hp.com>
Source record: 118069

Diode detectors will fry at +30 they are only good to +20. if you
use a 10dB pad infront then you meter needs to read down to -40.
this is not easy. you will need a chopper stablized front end
on your system. The biggest problem is thermal drift due to solder
joints (yes, solder joints!). I built the Wavetek 8542 power meter
and know all the tricks. you will also have problems with linearity
the diodes are only linear below -20 dBm and about that you need
to correct for them. detector design below 2GHz is easy and gets
very hard above that. If you are really set on this tell me the
details of what you are trying to do.

--
Mark Butterworth
HEWLETT-PACKARD
Optical Communications Divsion
370 West Trimble Road MS 90TZ
San Jose, CA 95131
phone 408-435-5836 phone
fax 408-435-5838
Email mark@hpocmme.sj.hp.com

811. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-06 22:53:38 UTC
From: wayne@fc.hp.com
Message-ID: <Cnv0xF.51A@fc.hp.com>
Source record: 118149
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Tom Bruhns wrote in part:

> As a simple feasibility check, I asked a curvefitter to fit to a couple
> linear phase ramps with constant amplitude, offset by 90 degrees, in the
> range from 300Hz to 3.5kHz, and it didn't have any trouble getting
> within a tenth dB and under a degree, with about 14 poles and 14 zeros
> for each. None of the poles was particularly high Q: max about 8.

Another interesting case is to start with a conventional elliptic function
bandpass response, then proceed to the two networks with flat group delay
and 90 degree phase difference, keeping the nice elliptic magnitude response.
The finite jw-axis zeros may well wreak havoc -- with the number of poles
and zeros (for the same overall tolerances on amplitude and phase errors as
you have above) increasing significantly.

Wayne
KD0EA

nb: As you mentioned, nowadays the right way to go would be DSP.

812. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 01:47:09 UTC
From: jimn0oct@aol.com
Message-ID: <2nvomt$9p4@search01.news.aol.com>
Source record: 118150

In article <1994Apr3.022456.11057@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP))
writes:

>There was one in 73 a few years ago but I wouldn't recommend you build
>it.

>The ARRL Handbook has a 2M transverter for several years. I've heard
>rumors that the Packrats are working on an improved one--probably with
>better transmit IMD, but it may be a while before this design is
>available. (Packrats--W3CCX is the club call)

Thanks, Zak. I'm beginning to think my only option is to build a vxo-cw rig.
Not too tough, but will have to use HR-2600 for 10 meters. What about
transverters from Hamtronics or other places? Again, thanks!

73, de JimN0OCT

813. Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 01:48:15 UTC
From: mortense@matt.ksu.ksu.edu
Message-ID: <2nvoov$ohm@matt.ksu.ksu.edu>
Source record: 118072

Hi:

I'm in the process of building a VHF synthesizer. I had originally
planned on using DDS to provide the reference to a PLL multiplier.
Unfortunately the chip (AD7008 -> Great chip!) doesn't seem to be available
with out a significant lead time. I'm considering just rolling my own
using the MSB of the phase word as my "DAC". Has anyone tried this?
Any problems from the spurs ... ? Any thoughts ...?

Thanks for any input!
nam

mortense@matt.ksu.ksu.edu

() When all you have is a hammer ...
########======||
... everything looks like a nail!

814. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 01:49:02 UTC
From: jimn0oct@aol.com
Message-ID: <2nvoqe$9pr@search01.news.aol.com>
Source record: 118151

In article <1994Apr6.091104.406@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) writes:

RSGB VHF UHF DX BOOK

Thanks for that info. My local electronics store actually has that , so I will check it out. Again, thanks.!

73, de JimN0OCT

815. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 01:51:01 UTC
From: jimn0oct@aol.com
Message-ID: <2nvou5$9q9@search01.news.aol.com>
Source record: 118152

In article <CnuBvM.B2H@comtrol.com>, chrise@comtrol.com (Chris Elmquist) writes:

I forgot what you wrote. Anyhow, I will check DownEast Micro's new catalog. I bought two on the 2600's, and neither seemed to be potted, but I will check it out.

73, de JimN0OCT

816. Fildes has an FTP Home

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 01:51:44 UTC
From: Bob Lombardi <boblombardi@delphi.com>
Message-ID: <howsyQQ.boblombardi@delphi.com>
Source record: 118068

Last week I posted a message looking for an FTP site home for
my filter design program FilDes. It now has such a home at
ftp.netcom.com in /pub/rander, thanks to the help of Ray Anderson
WB6TPU (a great call for a Turbo Pascal programmer, like me, to
remember!)

If you have filter design to do, and are interested in a filter
synthesis program that uses modern network theory, check it out
and enjoy!

73,
Bob

--
Bob Lombardi WB4EHS >>>> internet: boblombardi@delphi.com
Melbourne, FL >>>> Engaged in too many hobbies to list here!
"It's great to be young and insane!" -- Michael Keaton `The Dream Team'
"It's pretty good to be middle-aged and insane, too." -- Me

817. Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 02:34:16 UTC
From: trier@odin.ins.cwru.edu
Message-ID: <2nvrf8$csa@usenet.INS.CWRU.Edu>
Source record: 118153

Is it practical to do computer-controlled plotting of etch resist directly on a PC board? I have a Houston Instruments flat-bed plotter that might prove useful for this. Three problems I see: (1) getting a pen with decent etch-resist ink that will fit the plotter, (2) finding a PC board CAD program that can talk to this old thing, and (3) making sure the plotter doesn't move too fast for good distribution of the ink.

Surely this has been tried already. Is it practical?

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quoi."
Home: sct@po.cwru.edu - Peter Schickele

818. Re: CTCSS unit - any idea ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 04:03:37 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Apr7.040337.8961@vlsi.polymtl.ca>
Source record: 118079

In article <2nu9pe$bi7@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:

> I'm planning to build a V/UHF QRP rig, just for repeater usage. However,
>I was wondering if any CTCSS IC was unleashed in the market, because I know
>about DTSS tones, but CTCSS is another story :(

Vince:

It doesn't pay to build one of these PL encoders anymore. Communications Specialists in California sells one that is small enough to fit inside a handie-talkie and will synthesize all the standard PL tones. All you need to do is connect 12V, ground and audio; bingo! you're in business. The cost?...I think I paid $25 (US) when I bought mine. For the phone number, or address, just look in QST or any other North-American ham rag...they advertise alot. 73, Nick.

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

819. Re: IR remote control

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 04:14:19 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Apr7.041419.9021@vlsi.polymtl.ca>
Source record: 118080

In article <2nuu96$j8c@lll-winken.llnl.gov> hunter@s07.es.llnl.gov (Steve Hunter 510-423-2219) writes

> I would like to make a remote control for a project. I just want to send
> from the remote to the project. My TV remote control has proprietary parts.
> Are their any parts available for simple IR remote control transmitters
> and receivers?

Steve:

Plessy Semiconductor has a chip set pair that you can use for your project.
The transmitter is the SL490 and the receiver is an SL486. These numbers
are quite old, but I believe they are still current. 73, Nick.

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****

* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

820. Fixing HV supply on 'scope

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 08:59:04 UTC
From: dbraun@ilx049.iil.intel.com
Message-ID: <2o0i0o$20pa@ilx018.iil.intel.com>
Source record: 118154

The HV winding in the power transformer of my scope (actually a old cheesy Heathkit model) failed, and I was wondering: Is there some easy replacement? It needs about 1000-1200 volts at maybe 1mA max. Don't Xerox machines have some little solid-state module that provides the HV for their corona wires? Could one of these work?

Doug Braun Intel Israel, Ltd. M/S: IDC-42 (new mailstop!)
4X/N1OWU/AA Tel: 011-972-4-655069 dbraun@inside.intel.com

821. HomeBrew FT Site

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 11:07:58 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Apr7070758@splinter.coe.neu.edu>
Source record: 118155

Hi:
Is there a favorite FTP site for all the HomeBrewers out there?

-Dean

822. QRP Magazines like SPRAT, etc.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 11:10:45 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Apr7071045@splinter.coe.neu.edu>
Source record: 118156

Hi:
I recently received a complimentary copy of SPRAT, the journal of the
G-QRP Club. I was great reading! Anyone know of other 'zines' I could try?

-Dean

823. HELP : Apartment Antenna System

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 11:15:34 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Apr7071534@splinter.coe.neu.edu>
Source record: 118157

Hi:
I just got an old SW Rx and would like to set it up w/ an antenna.
I want to receive 80m (and eventually Transmit w I finally get my ticket) on
80m. My 'shack' is at least 25' from any ground (2nd floor apt.) and I have
very little space! The ground is a Steam radiator pipe. I have an MFJ-16010
random wire tuner, if this helps. Could someone help w/ suggestions?

-Dean

824. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 12:24:45 UTC
From: pvr@wang.com
Message-ID: <Cnw2HA.8DA@wang.com>
Source record: 118158

trier@odin.ins.cwru.edu (Stephen C. Trier) writes:

>Is it practical to do computer-controlled plotting of etch resist
>directly on a PC board? I have a Houston Instruments flat-bed plotter
>that might prove useful for this. Three problems I see: (1) getting a
>pen with decent etch-resist ink that will fit the plotter, (2) finding
>a PC board CAD program that can talk to this old thing, and (3) making
>sure the plotter doesn't move too fast for good distribution of the
>ink.

>Surely this has been tried already. Is it practical?

I have tried a number of methods to make pc boards. I now use resist
ink on copper drawn with a plotter. I use a HP9872 bed plotter.
I have heard of people using the smaller HP moving paper plotters
with some success.

I have been experimenting with using a steel tip pen on pc board
and have had quite good results. I have also tried fiber tip pens.
These are Staedler 31HP03K-2 pens for HP plotters. These work fine
as far as the resist characteristic goes. They are not so good on
line width. They take about a half inch to start drawing properly,
this with only 30 seconds of uncapped time before plotting.

The ink that I use in my steel pens is Staedtler 748 PLP red.
Before you run out and order it, it has been discontinued. Not
that they don't make it anymore, they don't import it anymore.
Their technical person told me that EPA labeling rules dictated
a warning label and they only sold $5000 worth of the stuff a year
so they stopped shipping it over. It is the ink used in the
31HP03K-2 pens.

I use a Staedtler 757-PL2-CS pen tip. This is a .25 mm, cross
groved, tungsten carbide tip pen. It produces consistant width
lines that have a consistent coating of ink. I also tried a
ordinary steel tip disposable pen. These come with the pen
tip not inserted into the ink cartridge. I punched the membrane
out and dumped the original ink out and refilled it with the
ink mentioned above. This worked just as good as the tungsten
pen tip and only cost $10 for the pen verses $50 for the tungsten
tip pen and adapter. The drawback is that after the ink runs out
of the steel pen you cannot refill it. The tungsten pen is refillable
and disassembleable for cleaning. You must slow the plotter
drawing speed. I use 1 CM per second, the slowest. The ink
cannot flow fast enough to keep up with the normal speed. The
speed is set whit a command to the plotter.

I have a brochure from General Consulting that sells
a system for direct plotting on copper. They plot on very thin
single side copper laminate and then later glue the thin laminate
to a thicker fiberglass substrate to get the final double sided
product. They sell a kit for $199 but you can buy the ink
seperately, for $50 per ounce!!! I have not tried their ink but
if it works as well as the Staedler ink then it should produce
good results.

General Consulting
12856 Inglewood Ave.
Hawthorne, Ca. 90250-9902

I get the best results if the lines are drawn twice. I do this
by specifying the pen width as slightly smaller that the trace width.
This causes the cad package to believe that it has to trace the lines
twice to get the proper width. The second pass is slightly offset
from the first. I also slow the plotter down to it's slowest
speed, 1 cm/sec. This gives the ink time to flow into a good
solid line.

The plotter that I use has a HP-IB interface. These plotters
are much more common on the surplus market than the async interface
version. I drive it through my parallel port using a special
cable and device driver supplied by Orion Engineering.

Orion Engineering
7691 Lincoln Trail
Plainfield, IN. 46168
(317) 839-9673

--
-->>>>>>>>>> Peter Reilley ..... pvr@wiis.wang.com ..... KA1LAT <<<<<<<<<<--
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

825. PIN diodes & feedthru caps, WHERE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 14:23:42 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <1994Apr7.142342.40764@yuma>
Source record: 118160

I'm in the building mode again, and I'm looking for the above parts via mailorder. Mouser, Digi-Key and Allied aren't any help, who is?
73, Galen, KF0YJ

826. Texas Instrument Speech Chip Uses?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 15:16:41 UTC
From: ren@rap.ucar.edu
Message-ID: <2o184p$loq@ncar.ucar.edu>
Source record: 118161

I recently bought a couple of those TI 'Speak 'n (whatever)' toys
at a second hand store. I've heard they were popular 'hacker'
sources a few years back. If you have any info how people
used these, or ftp sites, or magazine articles, please email me.
And puh-leez, don't ask me to hook it up to an umbrella,
record player and saw blade to 'Phone-Home'! (tried it, didn't work B^)
Thanks!
ren
dona nobis pacem

827. HAMBREW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 15:34:41 UTC
From: g3rjv@gqrp.demon.co.uk
Message-ID: <765732881snz@gqrp.demon.co.uk>
Source record: 118162

Just received my first copies of hambrew magazine
(1-800-5-HAM RIG for information)
Looks an interesting little magazine for the homebrewer
--

George Dobbs G3RJV "It is vain to do with more,
G-QRP Club what can be done with less."
---------- William of Occam (1290-1350)

828. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 16:43:58 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr7.164358.6906@ke4zv.atl.ga.us>
Source record: 118163

In article <2nvrf8$csa@usenet.INS.CWRU.Edu> trier@odin.ins.cwru.edu (Stephen C. Trier) writes:
>Is it practical to do computer-controlled plotting of etch resist
>directly on a PC board? I have a Houston Instruments flat-bed plotter
>that might prove useful for this. Three problems I see: (1) getting a
>pen with decent etch-resist ink that will fit the plotter, (2) finding
>a PC board CAD program that can talk to this old thing, and (3) making
>sure the plotter doesn't move too fast for good distribution of the
>ink.
>
>Surely this has been tried already. Is it practical?

India ink makes an adequate resist, but it doesn't dry fast enough
so multiple passes tend to smear. The problem is with writing speed.
Most plotters write too fast to get good coverage. This is especially
a problem for narrow traces. For wider traces you can make multiple
passes to fill in, but with narrow traces that usually generates blobs.
Copper doesn't take ink like paper does. I've tried special resist pens,
but they skip badly at plotter speeds. If you can convince your plotter
to slow down to about 1 inch per second, it'll work pretty well.

If there isn't a driver for your plotter in your favorite CAD program,
most CAD package drawings can be imported into Autocad, and if it
ever plotted, Autocad has a driver for it.

I've started just laser printing the pattern on transparencies and
ironing it onto the copper. Works pretty well, and you can do any
slight touchup needed with a resist pen.

What I'd really like is one of those plotters with a milling cutter
instead of a pen. That's the slick way to go, no messy etching, and
lots of nice groundplane.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

829. Re: Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 16:51:18 UTC
From: tomb@lsid.hp.com
Message-ID: <CnwEtI.4or@hpcvsnz.cv.hp.com>
Source record: 118164

Alvin Nor Mortensen (mortense@matt.ksu.ksu.edu) wrote:
: I'm in the process of building a VHF synthesizer. I had originally
: planned on using DDS to provide the reference to a PLL multiplier.
: Unfortunately the chip (AD7008 -> Great chip!) doesn't seem to be available
: with out a significant lead time. I'm considering just rolling my own
: using the MSB of the phase word as my "DAC". Has anyone tried this?
: Any problems from the spurs ... ? Any thoughts ...?

Lots of spurs lurking about out there on this one. Consider a
clock at 40MHz, used to generate a DDS signal at 10MHz. If it's
exactly 4:1 division, there won't be any jitter on the output.
But if you want 10.000 + or - a little, then most of the time
you divide by 4, but sometimes you divide by 3 or 5, getting to
the MSB. This means that the spectral purity of the output is
very poor.

It may be possible to do something like the fractional-N pll to
provide an incremental analog delay of the square wave edges,
delaying each successive edge by a little more, till you
accumulate a whole clock pulse of delay at which point you
reset the delay, insert one extra pulse, and start the cycle
over again. This would probably be hard to get really right
(good spectral purity).

830. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 17:07:05 UTC
From: tomb@lsid.hp.com
Message-ID: <CnwFJt.4y2@hpcvsnz.cv.hp.com>
Source record: 118165
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Wayne Covington (wayne@fc.hp.com) wrote:

: Another interesting case is to start with a conventional elliptic function
: bandpass response, then proceed to the two networks with flat group delay
: and 90 degree phase difference, keeping the nice elliptic magnitude response.
: The finite jw-axis zeros may well wreak havoc -- with the number of poles
: and zeros (for the same overall tolerances on amplitude and phase errors as
: you have above) increasing significantly.

If you look at this a little differently, it's easy to see that the number of poles & zeros shouldn't be significantly affected. Come up with a pair of filters for quadrature phase that you are happy with for amplitude and phase matching. Add the same zeros and/or poles to both. Then the amplitude and phase matching will be unchanged. However, it should be easier to put the frequency shaping outside the quadrature phase network, since it can then be guaranteed to be identical for both channels. Leave the quadrature network all-pass; if you wish, shape its absolute phase to compensate the frequency-shaping filter. At least, that is how I'd approach it if I were constrained to do it analog.

831. Modifying Vacuum Variables

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 17:17:42 UTC
From: drs@ccd.harris.com
Message-ID: <1994Apr7.171742.13418@ccd.harris.com>
Source record: 118166

I have an older vacuum variable that is of the plunger style. The newer type have a screw mechanism. Anybody have experience with or know if it is within an average persons mechanical ability to modify it to screw type? I saw a couple of them at a hamfest that were supposedly originally plunge type.

--

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |
---

832. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 18:56:38 UTC
From: henrys@netcom.com
Message-ID: <henrysCnwKME.8Gn@netcom.com>
Source record: 118167

Chris Elmquist (chrise@comtrol.com) wrote:
: What I'd like to know-- is if the mentioned HR-2600 can be modified for
: 26 to 30 MHz coverage..

Good point Chris.

Remember, there is a one to one relationship in tuning between the
transverter and the transceiver. If the transverter is set up for
a transceiver that tunes from 28 to 30 Mhz, then you will only get
2 Mhz coverage on the conveeted frequency. So if you want full
coverage on 2 meter (144-148) then your transceiver needs to tune
from 4 Mhz. Likewise, for 6 meter (50-54) you also need
4 Mhz coverage.

Therefore, if the transverter is set up to convert 28Mhz to 144Mhz
(or 50 Mhz) then on most transceivers that tune up to 30Mhz, you will
only get 2Mhz band spread (ie 144-146 Mhz or 50-52 Mhz).

Some transverters have a switch that will allow you to change your
band spread.

So before you order the transverter, make sure that you will be able
to tune the freqs that you want to tune.

Smitty, NA5K
--

| Henry B. Smith - NA5K henrys@netcom.com |
| Dallas, Texas |
| |
| "I'm not sure I understand everything that I know" |
---

833. QSL-info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 19:45:22 UTC
From: egilsoe@Lise.Unit.NO
Message-ID: <2o1nsi$25q@ugle.unit.no>
Source record: 118070

Is there anyone who can help us with QSL-managers or adresses for the following callsigns:

JD1BAX WKD APRIL 17th 1982
YA2CW APRIL 14th 1992
TG9AXB AUG. 17th 1992
J69B SEPT. 14th 1992
YJ0S MAY 31st 1993
6Q2A NOV. 29th 1993
ZC4AB DEC. 14th 1993

P40X WKD CQWW CW -92
BT1BJ WPX CW -93
KP2A CQWW CW -93
FG5BG CQWW CW -93
FR5KH RAF -94
9M6LS WPX SSB -94
4D2HSP WPX SSB -94
HH2PK WPX SSB -94
YM94KK WPX SSB -94
ZP0Y WPX SSB -94

XT2BU
CO7MF
CO3RA
UA3YAR (MNGR. FOR 4K1YAR, CBA DOESN'T WORK)
YS1JRG
VE3UWC/VE8 (HOMECALL NOT IN CB -93)

73s es gd dx de

Egil Soevik Pedersen / LA7HIA

834. Re: Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 19:51:47 UTC
From: alanb@sr.hp.com
Message-ID: <Cnwn6D.GCz@srgenprp.sr.hp.com>
Source record: 118071

Tom Bruhns (tomb@lsid.hp.com) wrote:
: Alvin Nor Mortensen (mortense@matt.ksu.ksu.edu) wrote:
: : I'm in the process of building a VHF synthesizer. I had originally
: : planned on using DDS to provide the reference to a PLL multiplier.
: : Unfortunately the chip (AD7008 -> Great chip!) doesn't seem to be available
: : with out a significant lead time. I'm considering just rolling my own
: : using the MSB of the phase word as my "DAC". Has anyone tried this?
: : Any problems from the spurs ... ? Any thoughts ...?

: Lots of spurs lurking about out there on this one. Consider a
: clock at 40MHz, used to generate a DDS signal at 10MHz. If it's
: _exactly_ 4:1 division, there won't be any jitter on the output.
: But if you want 10.000 + or - a little, then most of the time
: you divide by 4, but sometimes you divide by 3 or 5, getting to
: the MSB. This means that the spectral purity of the output is
: very poor.

Another possibility would be to connect the most-significant word of the
phase accumulator to a real DAC. You'd get a sawtooth-wave output
so the harmonics would be terrible, but it seems like the phase jitter
would be no worse than with a sine-wave output using the same number
of bits.

AL N1AL

835. Small (1-5 watt?) AM transmitter.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 21:19:18 UTC
From: cs125410@diff.csc.lsu.edu
Message-ID: <2o51q3$12v@vixen.cso.uiuc.edu>
Source record: 118073
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

Howdy. I found out recently that it is legal to run an unlicensed AM staion on a college campus at whatever power you like so long as you do not interfere with other stations that cover that area and the field strength of your signal does not exceed some certain amt 30 meters off campus. So, I figured I'd look into starting one up.

Anyway, what I am looking for is plans or a kit for something to transmit with. I know how to build a very simple AM transmitter, but it is very primitive, and I'm sure my signal would not be very clean or steady. So, if anyone knows where I can get a kit or some plans for an easily built (by a reasonably mechanical type person with a small amt of knowledge of electronics) transmitter, could you point me in the right direction?

Thanks,
Craig.

Newsgroups: alt.radio.pirate,rec.ham.radio.homebrew,rec.radio.broadcasting
Subject: Small (1-5 watt?) AM transmitter.
Summary:
Expires:
Sender:
Followup-To:
Distribution: world
Organization: Department of Computer Science, LSU, Baton Rouge
Keywords:
Cc:

Howdy. I found out recently that it is legal to run an unlicensed AM staion on a college campus at whatever power you like so long as you do not interfere with other stations that cover that area and the field strength of your signal does not exceed some certain amt 30 meters off campus. So, I figured I'd look into starting one up.

Anyway, what I am looking for is plans or a kit for something to transmit with. I know how to build a very simple AM transmitter, but it is very primitive, and I'm sure my signal would not be very clean or steady. So, if anyone knows where I can get a kit or some plans for an easily built (by a reasonably mechanical type person with a small amt of knowledge of electronics) transmitter, could you point me in the right direction?

Thanks,
Craig.

Newsgroups: rec.radio.amateur.homebrew
Subject: clah
Summary:
Expires:
Sender:
Followup-To:
Distribution: world
Organization: Department of Computer Science, LSU, Baton Rouge
Keywords:
Cc:

836. QRP Magazines like SPRAT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 21:40:56 UTC
From: g3rjv@gqrp.demon.co.uk
Message-ID: <765754856snz@gqrp.demon.co.uk>
Source record: 118074

The ones I like are:

LO-KEY from the VK CW Operators QRP Club : N8ET takes dues. n8et@delphi.com
Membership: Kevin, VK5AKZ, 41 TOBRUK AVE. ST. MARYS, S.A. 5042. AUSTRALIA

I have just discovered HAMBREW : looks interesting
- details toll free on 1-800-5-HAMRIG

OK QRP INFO from the OK QRP Club [in Czech & some English] Details:
OK1CZ, Petr Doudera, U1, BATERIE 1, 16200, PRAHA 6, CZECH REPUBLIC.

QU-R-PE from EA QRP Club [Spanish only] via EA3EGV
EA-QRP-CLUB PAU ABAD 15 30 1a, 08207 SABADELL, BARCELONA, SPAIN.

Not seen it yet, but some are heading my way, with good advanced reports:
QRPp from NorCal - try Doug Hendricks on dh@deneb.csustan.edu

..... and naturally The QRP ARCI Quarterly!
I am sure others can add to list
73
--

George Dobbs G3RJV "It is vain to do with more,
G-QRP Club what can be done with less."
---------- William of Occam (1290-1350)

837. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-07 21:48:18 UTC
From: henrys@netcom.com
Message-ID: <henrysCnwsKK.1B7@netcom.com>
Source record: 118075

Correction.......

Henry B. Smith (henrys@netcom.com) wrote:
: Chris Elmquist (chrise@comtrol.com) wrote:
: : What I'd like to know-- is if the mentioned HR-2600 can be modified for
: : 26 to 30 MHz coverage..

: Good point Chris.

: Remember, there is a one to one relationship in tuning between the
: transverter and the transceiver. If the transverter is set up for
: a transceiver that tunes from 28 to 30 Mhz, then you will only get
: 2 Mhz coverage on the conveeted frequency. So if you want full
: coverage on 2 meter (144-148) then your transceiver needs to tune
: from 4 Mhz. Likewise, for 6 meter (50-54) you also need
^^^^^^^^^^
a 4 Mhz spread. Likewise, for 6 meter (50-54) you also need a 4 Mhz
spread.

: Therefore, if the transverter is set up to convert 28Mhz to 144Mhz
: (or 50 Mhz) then on most transceivers that tune up to 30Mhz, you will
: only get 2Mhz band spread (ie 144-146 Mhz or 50-52 Mhz).

: Some transverters have a switch that will allow you to change your
: band spread.

: So before you order the transverter, make sure that you will be able
: to tune the freqs that you want to tune.

sorry about the mistype.

--

| Henry B. Smith - NA5K henrys@netcom.com |
| Dallas, Texas |
| |
| "I'm not sure I understand everything that I know" |
----

838. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 00:27:38 UTC
From: wayne@fc.hp.com
Message-ID: <Cnwzy2.3z0@fc.hp.com>
Source record: 118076
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

tomb@lsid.hp.com wrote:

>Wayne Covington (wayne@fc.hp.com) wrote:

>: Another interesting case is to start with a conventional elliptic function
>: bandpass response, then proceed to the two networks with flat group delay
>: and 90 degree phase difference, keeping the nice elliptic magnitude response.
>: The finite jw-axis zeros may well wreak havoc -- with the number of poles
>: and zeros (for the same overall tolerances on amplitude and phase errors as
>: you have above) increasing significantly.

>If you look at this a little differently, it's easy to see that the number
>of poles & zeros shouldn't be significantly affected. Come up with a
>pair of filters for quadrature phase that you are happy with for
>amplitude and phase matching. Add the same zeros and/or poles to
>both. Then the amplitude and phase matching will be unchanged. However,
>it should be easier to put the frequency shaping outside the quadrature
>phase network, since it can then be guaranteed to be identical for both
>channels. Leave the quadrature network all-pass; if you wish, shape its
>absolute phase to compensate the frequency-shaping filter. At least, that
>is how I'd approach it if I were constrained to do it analog.

I think the key phrase is "shape its absolute phase to compensate the
frequency-shaping filter." I didn't explain the situation I had in mind
very well. Let me try again.

Suppose the system has been realized with a conventional all-pole bandpass
filter such as Chebychev or Butterworth for the amplitude shaping, followed
by all-pass networks to flatten the system's group delay and get the
90-degree phase difference. The 90-degree phase difference and flatness of
group delay are just within certain tolerances.

Now you decide to improve the amplitude response (better shape factor) by
changing the bandpass filter to the elliptic version, with the same number
of poles but additional jw-axis zeros. You try to readjust the all-pass
networks to restore the flat group delay and the 90-degree phase difference
to within the original tolerances.

My conjecture is that this cannot be done without adding more all-pass
pole-zero pairs. If the group delay is within tolerance, the 90-degree
phase difference isn't, or vice-versa.

Wayne

839. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 00:42:01 UTC
From: jimn0oct@aol.com
Message-ID: <2o298p$p5q@search01.news.aol.com>
Source record: 118077

In article <henrysCnwKME.8Gn@netcom.com>, henrys@netcom.com (Henry B. Smith) writes:

>Remember, there is a one to one relationship in tuning between the
>transverter and the transceiver. If the transverter is set up for
>a transceiver that tunes from 28 to 30 Mhz, then you will only get
>2 Mhz coverage on the conveeted frequency. So if you want full
>coverage on 2 meter (144-148) then your transceiver needs to tune
>from 4 Mhz. Likewise, for 6 meter (50-54) you also need
>4 Mhz coverage.

Also a good point, but I only want coverage from 144.0 to 144.2 or so. Also, Chris may have wanted to cover CB bands with the HR-2600, which I am told is possible.

73 y'all, de JimN0OCT

840. Re: CTCSS unit - any idea ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 03:25:27 UTC
From: bobw@col.hp.com
Message-ID: <2o2ir7$brt@hp-col.col.hp.com>
Source record: 118078

nick ciarallo (nick@vlsi.polymtl.ca) wrote:
: In article <2nu9pe$bi7@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:

: > I'm planning to build a V/UHF QRP rig, just for repeater usage. However,
: >I was wondering if any CTCSS IC was unleashed in the market, because I know
: >about DTSS tones, but CTCSS is another story :(

: Vince:

: It doesn't pay to build one of these PL encoders anymore. Communications
: Specialists in California sells one that is small enough to fit inside a
: handie-talkie and will synthesize all the standard PL tones. All you need
: to do is connect 12V, ground and audio; bingo! you're in business. The
: cost?...I think I paid $25 (US) when I bought mine. For the phone number,
: or address, just look in QST or any other North-American ham rag...they
: advertise alot. 73, Nick.

Ummmm. Nick didn't say whether he needed encode or decode. I also
vote for Comm Specialists Inc 1-800-854-0547 but decode will cost
well over $50 from them (encode only is more like $25).

Bob Witte / bobw@col.hp.com / Hewlett Packard PMO / KB0CY / (719) 590-3230

841. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 12:09:31 UTC
From: pvr@wang.com
Message-ID: <CnxwFw.CCz@wang.com>
Source record: 118085

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>Copper doesn't take ink like paper does. I've tried special resist pens,
>but they skip badly at plotter speeds. If you can convince your plotter
>to slow down to about 1 inch per second, it'll work pretty well.

HP plotters have a command that will slow plotting down to
1 cm per second and I believe Houston Instruments plotters have
a command also. A problem remains when the application issues
a plotter reset before plotting and after you issue your speed
command. A solution is to plot to a file and edit the file
before plotting it.

Peter.
--
-->>>>>>>>>> Peter Reilley ..... pvr@wiis.wang.com ..... KA1LAT <<<<<<<<<<--
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

842. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 12:13:25 UTC
From: agodwin@acorn.co.uk
Message-ID: <2o3hp5$9b5@acorn.acorn.co.uk>
Source record: 118081

In article <1994Apr7.164358.6906@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>What I'd really like is one of those plotters with a milling cutter
>instead of a pen. That's the slick way to go, no messy etching, and
>lots of nice groundplane.
>

Maybe the people building CNC drilling machines will be able to do this .. However, a halfway house (still needs messy etching but getting away from the problems with limited resolution of cheaper pens) might be to mill away only the etch-resist.

Spray a clean board with an etch-resistant coating (Letraset protective spray perhaps, or a damp-proofing spray for HT leads) then remove fine lines from it with some sort of replacement pen. The force and stability required to move a cutter that's attacking a thin plastic layer would be much less than that required to mill copper, and there'd be less of a problem with swarf.

I haven't tried this. I haven't even found time to try the etch-resist pen yet, so I don't know how well that's going to work for my application. I notice, however, that Staedtler have changed the design of their pens slightly, and the packaging specifically claims that they're fast-starting. Perhaps they're better than they used to be.

-adrian

843. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 14:30:42 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr8.143042.11376@ke4zv.atl.ga.us>
Source record: 118082

In article <2o3hp5$9b5@acorn.acorn.co.uk> agodwin@acorn.co.uk (Adrian Godwin) writes:
>In article <1994Apr7.164358.6906@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>
>>What I'd really like is one of those plotters with a milling cutter
>>instead of a pen. That's the slick way to go, no messy etching, and
>>lots of nice groundplane.
>>
>
>Maybe the people building CNC drilling machines will be able to do this ..

They have, but they're quite expensive for an individual hobbiest. I've also seen homebrew adaptations of regular plotters and Dremel tools. They don't work very well because the plotter mechanism isn't designed to handle the forces needed for milling.

>However, a halfway house (still needs messy etching but getting away from
>the problems with limited resolution of cheaper pens) might be to mill
>away only the etch-resist.
>
>Spray a clean board with an etch-resistant coating (Letraset protective
>spray perhaps, or a damp-proofing spray for HT leads) then remove fine
>lines from it with some sort of replacement pen. The force and stability
>required to move a cutter that's attacking a thin plastic layer would
>be much less than that required to mill copper, and there'd be less of
>a problem with swarf.

This is a clever idea. You could use a swivel knife as your pen. The resist is likely to come off in curls though, so you probably need to chase it with a whisk brush. At slow plotting speeds, you should be able to keep the work area clear by hand. I think I'll try this out.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

844. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 16:05:53 UTC
From: agodwin@acorn.co.uk
Message-ID: <2o3vd1$f7h@acorn.acorn.co.uk>
Source record: 118083

In article <1994Apr8.143042.11376@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <2o3hp5$9b5@acorn.acorn.co.uk> agodwin@acorn.co.uk (Adrian Godwin) writes:
>>Maybe the people building CNC drilling machines will be able to do this ..
>
>They have, but they're quite expensive for an individual hobbiest. I've
>also seen homebrew adaptations of regular plotters and Dremel tools. They
>don't work very well because the plotter mechanism isn't designed to handle
>the forces needed for milling.
>

Sorry, I didn't mean the commercial ones : I've seen description here (or in sci.electronics, where this discussion usually lives) from people of those machines. But this is r.r.a.homebrew : there are a couple of people homebrewing CNC drill tables (and talk of offering kits ..), intended for drilling PCBs. These should do the job, but there are areas I'd expect them to have problems :

Not as precise as a plotter, so capable of fairly coarse tracks but not the .025 PQFP pin spacing I'm after.

Capable of more side-force than a plotter, but still optimised for down-force since it's expected that the drill will be up when the head (or table) is moving. This may be a problem if spring pressure is used to reduce backlash in the worm drives, but perhaps milling could also proceed in a direction on each axis that assists the spring rather than works against it.

Needs a very small bit (or an angled bit ?) to make a small gap. I think this came up before, but forget what was said. This is where my suggestion gains a little, since the cutting depth is very small.

-adrian

845. Re: PIN diodes & feedthru caps, WHERE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 16:26:06 UTC
From: zlau@arrl.org
Message-ID: <1994Apr8.162606.225@arrl.org>
Source record: 118084

Two sources are
Microwave Components of Michigan
PO Box 1697
Taylor MI 48180 313-753-4581 evenings

and Surplus Sales of Nebraska
1502 Jones Str
Omaha NE 68102
402-346-4750.

Both can come up with some pretty exotic RF parts
(not counting European semiconductors--I don't
know anyone selling any sort of selection in the
USA to amateurs)

Galen Watts (galen@picea.CFNR.ColoState.EDU) wrote:
: I'm in the building mode again, and I'm looking for the above parts via
: mailorder. Mouser, Digi-Key and Allied aren't any help, who is?
: 73, Galen, KF0YJ
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

846. Summary: adaptive denoising filters for voice

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 18:11:24 UTC
From: steve@hi.com
Message-ID: <steve-080494140719@brainiac.hi.com>
Source record: 118086
Cross-posted to: comp.dsp,rec.radio.amateur.homebrew

In a recent posting, I asked about the design of adaptive denoising filters for voice communications. Here is a summary of the post and the responses.

Many thanks to Randy Cole, Michael E. Deisher, and Steven R. Bryan for their helpful responses.

Regards,
-Steve

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

==========

From: steve@hi.com (Steve Byan)
Newsgroups: comp.dsp,rec.radio.amateur.homebrew
Subject: adaptive denoising filters for voice
Followup-To: comp.dsp,rec.radio.amateur.homebrew

Dr. Steven E. Reyer, WA9VNJ, and David L. Hershberger, W9GR published a brief tutorial in the September 1992 issue of "QEX", published by the ARRL. Their adaptive denoising filter uses Widrow's LMS algorithm to adapt an FIR filter, using a delayed version of the input signal as the reference signal. They claim that by proper choice of the delay and adaptation time constants, the FIR filter will adapt to a bandpass response around the portions of the spectrum which have a high "short-term" correlation (corresponding to the speech signal), and thus reduce the uncorrelated noise.

Reyer and Hershberger only reference Widrow et al's 1975 paper "Adaptive Noise Cancelling: Principles and Applications" in the Proc. IEEE Vol 63, No.2. I haven't tracked down this reference yet. (Wish I lived closer to a good university library.)

My questions:
1) Do the other denoising products use an algorithm similar to that described by Reyer and Hershberger? If not, what algorithms do they use?

2) Are there any good tutorial papers on this subject? Any important references other than Widrow et al?

3) It occurs to me that an LPC vocoder, such as used in a CELP vocoder, would serve as an effective denoising filter, since it supposedly models the vocal tract resonances. The excitation for the reconstruction filter would be the input (noisy) signal. Is it feasible to extract the LPC

parameters from a noisy signal? Is anyone using this approach?

From: cole@soldev.tti.com (Randy Cole)
Subject: Re: adaptive denoising filters for voice
Date: Mon, 14 Mar 1994 15:16:06

W9GR is on the net and may see your posting.

>My questions:
>1) Do the other denoising products use an algorithm similar to that
>described by Reyer and Hershberger? If not, what algorithms do they use?

There are some that supposedly use a technique you could call "power spectrum gating" or the like. Suppose you compute a long-term average power spectrum. You might convince yourself that this represents a "noise floor". Then you take a segment of the noisy signal, look at the power spectrum, and by some means or another throw away spectral bands that don't exceed the noise floor by some amount.

A grad student friend of mine used this technique 20 years ago and his version
exhibited very noticeable artifacts. Maybe people have thought of better ways
to do it.

>2) Are there any good tutorial papers on this subject? Any important
>references other than Widrow et al?

I dunno. See your (not so local) library :-)

>3) It occurs to me that an LPC vocoder, such as used in a CELP vocoder,
>would serve as an effective denoising filter, since it supposedly models
>the vocal tract resonances. The excitation for the reconstruction filter
>would be the input (noisy) signal. Is it feasible to extract the LPC
>parameters from a noisy signal? Is anyone using this approach?

LPC techniques in general don't handle broadband additive noise all that well. They go to pot pretty quickly for SNR less than 30 dB or so. I'd doubt
that any of those you mention use this approach.

Good luck!

Randy Cole
cole@soldev.tti.com

Date: Wed, 16 Mar 94 09:41:33 MST
From: deisher@enws125.eas.asu.edu (Michael E. Deisher)
Subject: Re: adaptive denoising filters for voice

> 2) Are there any good tutorial papers on this subject? Any important
> references other than Widrow et al?
>
> 3) It occurs to me that an LPC vocoder, such as used in a CELP

> vocoder, would serve as an effective denoising filter, since it
> supposedly models the vocal tract resonances. The excitation for the
> reconstruction filter would be the input (noisy) signal. Is it
> feasible to extract the LPC parameters from a noisy signal? Is
> anyone using this approach?

Yes, with limited success.

Here some tutorial papers on speech enhancement:

```
@incollection{boll92,
author="S. F. Boll",
title="Speech Enhancement in the 1980s: Noise Suppression with
Pattern Matching",
booktitle="Advances in Speech Signal Processing",
editor="S. Furui and M. M. Sondhi",
publisher="Marcel Dekker",
year={1992},
pages={309--325},
annote="copy on file"}

@article{ephr92c,
author="Y. Ephraim",
title="Statistical-Model-Based Speech Enhancement Systems",
journal="Proceedings of the IEEE",
volume={80},
number={10},
month={October},
year={1992},
pages={1526--1555},
annote="copy on file"}

@article{lim79,
author="J. S. Lim and A. V. Oppenheim",
title="Enhancement and Bandwidth Compression of Noisy Speech",
journal="Proceedings of the IEEE",
volume={67},
number={12},
month={December},
year={1979},
pages={1586--1604},
annote="copy on file"}

@techreport{makh89,
author="J. Makhoul and T. H. Crystal and D. M. Green and D. Hogan
and R. J. McAulay and D. B. Pisoni and R. D. Sorkin and
T. G. Stockham",
title="Removal of Noise from Noise-Degraded Speech Signals",
institution="National Research Council",
year={1989},
annote="copy on file"}
```

@article{osha89,
author="D. O'Shaughnessy",
title="Enhancing Speech Degraded by Additive Noise or Interfering
Speakers",
journal="IEEE Communications Magazine",
month={February},
year={1989},
pages={46--52},
annote="copy on file"}

A technique similar to the method you attributed to Reyer and
Hershberger may be found in:

J.E. Paul, Automatic digital audio processor (ADAP), Proc. 11th Annual
Asilomar Conf. on Circuits, Systems, and Computers, Pacific Grove, CA,
1978.

Hope this helps.

--Mike

==
| Mike Deisher Arizona State University
|
| deisher@dspsun.eas.asu.edu Telecommunications Research Center
|
| voice: (602) 965-0396 Signal Processing Laboratory
|
| fax: (602) 965-8325 Tempe, AZ 85287-7206
|
==

Date: Thu, 17 Mar 94 10:47:27 -0700
From: sxb@inel.gov (Steve Bryan)
Subject: Re: adaptive denoising filters for voice

Steve,

In article <steve-140394123659@brainiac.hi.com> you write:
>I'm interested in understanding the design of adaptive denoising filters
>for voice communications. There are several manufacturers selling DSP
>denoising filters to the amateur radio marketplace, and apparently some
>commercial units for aviation communications. Some well-known manufacturers
>are JPS Communications, Inc, Timewave Technology Inc, and W9GR.

I own a Timewave DSP-9 with which I am very happy.

>Dr. Steven E. Reyer, WA9VNJ, and David L. Hershberger, W9GR published a
>brief tutorial in the September 1992 issue of "QEX", published by the ARRL.
>Their adaptive denoising filter uses Widrow's LMS algorithm to adapt an FIR
>filter, using a delayed version of the input signal as the reference
>signal. They claim that by proper choice of the delay and adaptation time
>constants, the FIR filter will adapt to a bandpass response around the
>portions of the spectrum which have a high "short-term" correlation

>(corresponding to the speech signal), and thus reduce the uncorrelated
>noise.
>
>Reyer and Hershberger only reference Widrow et al's 1975 paper "Adaptive
>Noise Cancelling: Principles and Applications" in the Proc. IEEE Vol 63,
>No.2. I haven't tracked down this reference yet. (Wish I lived closer to a
>good university library.)

Widrow has published a book entitled "Adaptive Signal Processing". As
of a year ago, it was the only such book that had been published. I own
a copy, but I have only read selected chapters.

>My questions:
>1) Do the other denoising products use an algorithm similar to that
>described by Reyer and Hershberger? If not, what algorithms do they use?

The adaptive filter algorithm is very flexible, and can be used for
all sorts of things. What it does depends on the error signal that you
are providing to the algorithm. I suspect that my DSP-9 uses a
somewhat different approach for noise reduction, still based on adaptive
filtration. The denoiser follows the output of a selectable FIR
bandpass filter, and an optional adaptive notch filter. The adaptive
notch filter is fed a different error signal than the denoiser, and
seems to include more taps in the filter array.

The Timewave documentation is somewhat vague about what the specific
algorithms used are. There is mention of a correlation-based
approach. I think that the peak autocorrelation (not including the
zeroth time lag) of the signal is used to provide the error signal for
adaptation of the denoiser.

>2) Are there any good tutorial papers on this subject? Any important
>references other than Widrow et al?

I think that Widrows book is probably the best on adaptive algorithms
and applications. There is a book that is a compendium of articles that
is edited by Jae S. Lim called "Speech Enhancement" Prentice-Hall signal
processing series, ISBN 0-13-829705-3. It covers other denoising
algorithms as applied to speech signals. The table of contents
categorizes the articles concerned with enhancement of speech degraded
by additive noise under the following topic categories:

Effect of noise on speech communications
Systems based on the perceptial aspects of speech
Systems based on the periodicity of speech
Systems based on an underlying model of speech
Systems that require more than one microphone input
Applications of speech enhancement

There are three other major topics in the book in addition to
enhancement of speech degraded by additive noise, which are

Processing of speech prior to its degradation by additive noise
Enhancement of speech degraded by reverberation
Time scale modification of speech

This book is NOT a tutorial, but does contain many basis articles from
which many subsequent articles in each of the areas have been published.

>3) It occurs to me that an LPC vocoder, such as used in a CELP vocoder,
>would serve as an effective denoising filter, since it supposedly models
>the vocal tract resonances. The excitation for the reconstruction filter
>would be the input (noisy) signal. Is it feasible to extract the LPC
>parameters from a noisy signal? Is anyone using this approach?

This is covered in Lim's book under "systems based on an underlying
model of speech". There are three articles in this section of the book:
"All pole modelling of degraded speech", J.S. Lim and A.V. Oppenheim,
"Linear Predicitive Coding of Speech Signals in a High Ambient Noise
Environment", H. Kobatake, J. Inari, and S. Kakuta, and
"Maximum Likelihood Pitch Estimation", J.D. Wise, J.R. Caprio, and T.W.
Parks. I kind of doubt that any of the filters used for ham radio use
the LPC model approach, since extracting the LPC coefficients is pretty
expensive computationally.

Hope that this helps. Let me know if you have any other questions.

73,
-Steve
--

____

|Steven R. Bryan, Idaho National Engineering Lab. INTERNET: sxb@INEL.GOV
|
|N7MPY POB 1625 M.S. 2090 Phone: (208) 525-5484
|
|_____________Idaho_Falls,_Id._83415_____________FAX:___(208)_525-5996_____|

847. Re: PIN diodes & feedthru caps, WHERE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 18:34:33 UTC
From: tgm@netcom.com
Message-ID: <tgmCnyE9L.496@netcom.com>
Source record: 118089

Galen Watts (galen@picea.CFNR.ColoState.EDU) wrote:
: I'm in the building mode again, and I'm looking for the above parts via
: mailorder. Mouser, Digi-Key and Allied aren't any help, who is?
: 73, Galen, KF0YJ

I don't know about mail order but you usually can salvage some
feed-through caps from the mechanical tuner section of an old
junk TV. Usually you will find 3 or 4 feed-through caps.

As far as pin diodes go, I've heard rumor of using silicon
rectifier diodes as an ok substitute. Don't use the fast
recovery type. I guess the success of this substitution
is dependent on your frequency of interest. It is more likely to
work at VHF and above.

Thomas KI4N
tgm@netcom.com

848. Re: 2 meter transverter for HR 2600??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 19:03:58 UTC
From: dlleigh@frank.harvard.edu
Message-ID: <1994Apr8.150358.31381@husc14.harvard.edu>
Source record: 118087

In article <CnuBvM.B2H@comtrol.com> chrise@comtrol.com (Chris Elmquist) writes:
>What I'd like to know-- is if the mentioned HR-2600 can be modified for
>26 to 30 MHz coverage.. or is it likely to be potted with goo that prevents
>you from getting to the appropriate jumpers, diodes or whatever. Very early
>models were modifiable I understand... but recent ones were supposedly
>potted. I've never seen one myself...

There is a company called Chipswitch that sells replacement microprocessors for the HR-2600 (2510 and Lincoln too) which will allow the unit to operate from 24.8 MHz to 29.999 MHz and add lots of other features. Great for use with a transverter or if you want to do 12 meters. The chip was about $60 as I recall, and installation was straightforward (though you do have to solder and desolder).

I installed one in mine and it seems to work just fine. Their advertising material claims that some radios may lose PLL lock below 25.5 MHz and they sell a fix for this as well. My 2600 seemed to have no problems all the way down to 24.8 MHz. What I want to figure out now is how to lower the output power so I don't need a huge attenuator between the radio and the transverter.

Their info is:

Chipswitch
4773 Sonoma Hwy. Suite 132
Santa Rosa, CA 95409-4269
(707) 539-0512

Darren Leigh -- kc6euy
dlleigh@frank.harvard.edu

849. Re: Cheap Skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 19:21:53 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <69369@uugate.wa7slg.ampr.org>
Source record: 118088

Actually, an 8 bit DAC isn't a huge pain to homebrew.

A well-known computer graphics company (I will not mention the name) does
NOT bother with DACs (per-se) in its commercial-grade digital video equipment.
Rather, it simply hangs an R/2R network on the output of an HC chip
(like the 74HC373, 74HC3474 series...)

I have done this as well when building a DDS. The values I used were R=1k
for the R/2R network. I simply used an emitter-follower to drive the output,
but if one didn't really need a LOT of output (i.e. only a couple hundred
mv or so) you can just drop a 75 or 50 ohm resistor across its output and
feed it to the LPF that way.

There are several things to keep in mind, though: The outputs of the HC gates
themselves have finite resistance that should be taken into account. This
resistance is on the order of 30 to 80 ohms (depending on device, temperature,
phase of the moon, etc.) and that amount of resistance should be considered
to be series resistance on the gate output thus you would decrease the corr-
esponding resistors by that much. There just happen to be some standard 1%
values that come pretty close:-)

This sort of DAC isn't ultra-precision, but if you are careful, it actually
has good monotonicity. As you might expect, it's not as temperature-stable
as a "canned" one but if you are driving an LO or something, that's not
particularly important (oops... "using it as an LO, I mean...)

As for using the MSB, I would agree with the assessment that using the MSB
of the chain is a really rotten idea. In fact, those same spurs exist
even with the Sine/DAC arrangement but they are reduced in amplitude by the
amount of available quantization.

I might mention that on the several DDS's I built I had an extra XOR gate left
over. This came in handy for adding another LSB for "free". You can add another
MSB in a similar way with a Flip-Flop, too... Also, by appropriate use
of data latches, you can extend the operating frequency of a DDS using
standard HC logic to 7-8 Mhz for a 24 bit counter but when that is done
the chip count increases and some "QSY" flexibility considerations come into
play.

<Clint>

Amprnet: ka7oei@uugate.wa7slg.ampr.org
Internet: clint@uugate.aim.utah.edu

850. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 19:25:35 UTC
From: alanb@sr.hp.com
Message-ID: <CnyGMo.7Gp@srgenprp.sr.hp.com>
Source record: 118090
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Wayne Covington (wayne@fc.hp.com) wrote:
: tomb@lsid.hp.com wrote:

: Suppose the system has been realized with a conventional all-pole bandpass
: filter such as Chebychev or Butterworth for the amplitude shaping, followed
: by all-pass networks to flatten the system's group delay and get the
: 90-degree phase difference. The 90-degree phase difference and flatness of
: group delay are just within certain tolerances.

: Now you decide to improve the amplitude response (better shape factor) by
: changing the bandpass filter to the elliptic version, with the same number
: of poles but additional jw-axis zeros. You try to readjust the all-pass
: networks to restore the flat group delay and the 90-degree phase difference
: to within the original tolerances.

: My conjecture is that this cannot be done without adding more all-pass
: pole-zero pairs. If the group delay is within tolerance, the 90-degree
: phase difference isn't, or vice-versa.

So long as the additional filtering is done to both channels identically,
the phase and amplitude matching between the two channels is not afffected.

AL N1AL

851. Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-08 23:05:04 UTC
From: wayne@fc.hp.com
Message-ID: <CnyqsG.5AJ@fc.hp.com>
Source record: 118098
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

> So long as the additional filtering is done to both channels identically,
> the phase and amplitude matching between the two channels is not affected.
^^^^^^^^
> AL N1AL

Umm... true. But the overall group delay is affected. There is an offline discussion going on on this. The essence of it is that the finite zeros out of the passband by themselves don't affect the phase (certainly true) but the somewhat different pole positions have an effect of to-be-determined significance. Stand by.

Wayne

852. Re: Ramsey kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 02:31:02 UTC
From: nagle@netcom.com
Message-ID: <nagleCnz0Bq.5vp@netcom.com>
Source record: 118091

gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <CnFwKq.AxM@ra.nrl.navy.mil> drumhell@claudette.nrl.navy.mil (David Drumheller) writes:
>> I'm interested in getting on 440 mHz ... cheaply. So I would consider
>>building a Ramsey kit. (They cost about $160.) Questions: How easy are
>>they to build? Do they sell enclosures for them? How well do the radios
>>perform? How much test equipment do I need to calibrate and tune the
>>radio?
>Oh, oh, here we go again. The Ramsey kit is fairly easy to build, and
>yes they sell a cabinet. They don't perform that well, and you need
>sophisticated equipment, at least a spectrum analyzer, to tune them
>up properly.

Sounds about right. I've built a number of Ramsey kits of various flavors. The stepping motor driver worked fine. The 20MHz receiver had 3 components wrong and one misdrilled hole on the PC board, but it worked OK. (Why 20MHz? I just needed to see a working circuit with an NE602 at that frequency.) I just built the MD-3 motion detector, which is a 1GHz Doppler radar, and I can't even get it to oscillate. Tried changing the RF transistor; no joy.

John Nagle

853. Re: Small (1-5 watt?) AM transmitter.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 06:17:42 UTC
From: brt581s@nic.smsu.edu
Message-ID: <1994Apr9.061742.19523@cs.yale.edu>
Source record: 118092
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

CRAIG ALLEN JOHNSTON (cs125410@diff.csc.lsu.edu) wrote:
> Anyway, what I am looking for is plans or a kit for something to transmit
> with. I know how to build a very simple AM transmitter, but it is
> very primitive, and I'm sure my signal would not be very clean or
> steady. So, if anyone knows where I can get a kit or some plans for
> an easily built (by a reasonably mechanical type person with a small
> amt of knowledge of electronics) transmitter, could you point me in the right
> direction?

Just thought I'd point out that there are a few of us out here who'd
also be very interested in this information. Please, please, _please_
post it here!

Thanks in advance...

--

--Me. (Berry R. Thrailkill)
(brt581s@nic.smsu.edu)

854. Re: Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 09:57:13 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <2o5u5p$uk@proffa.cc.tut.fi>
Source record: 118093

Tom Bruhns (tomb@lsid.hp.com) wrote:

> Alvin Nor Mortensen (mortense@matt.ksu.ksu.edu) wrote:
> : I'm in the process of building a VHF synthesizer. I had originally
> : planned on using DDS to provide the reference to a PLL multiplier.
> : Unfortunately the chip (AD7008 -> Great chip!) doesn't seem to be available
> : with out a significant lead time. I'm considering just rolling my own
> : using the MSB of the phase word as my "DAC". Has anyone tried this?
> : Any problems from the spurs ... ? Any thoughts ...?

> Lots of spurs lurking about out there on this one. Consider a
> clock at 40MHz, used to generate a DDS signal at 10MHz. If it's
> _exactly_ 4:1 division, there won't be any jitter on the output.
> But if you want 10.000 + or - a little, then most of the time
> you divide by 4, but sometimes you divide by 3 or 5, getting to
> the MSB. This means that the spectral purity of the output is
> very poor.

Can anybody estimate the spectral distribution of these spurs ?

The far-out spurs are filtered out by the low-pass filter in the
PLL multiplier anyway, so all you have to worry about are the
close-in spurs. It depends on the response time requirements
of the PLL multiplier how much close-in spurs can be removed.

Paul OH3LWR

Phone : +358-31-213 3657
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI
Internet: Paul.Keinanen@Telebox.tele.fi
Telex : 58-100 1825 (ATTN: Keinanen Paul)
Mail : Hameenpuisto 42 A 26
FIN-33200 TAMPERE
FINLAND

855. Frequency Counter Circuit Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 13:34:05 UTC
From: David_Shalita.ES_AE@xerox.COM
Message-ID: <".9-Apr-94..6:34:05.PDT".*.D.R._Shalita.ES_AE@Xerox.com>
Source record: 118094

Hi,
I am repairing my old DSI 600 mhz counter (timebase died).

The unit displays freq readings even when the input signal is quite small. The readings occuring when input signal is a low amplitude, are usually slightly higher than the real freq or just high and wrong and random. This seems normal for this unit. The Prescaller IC tries to divide by 10 regardless of input signal amplitude.

I would like to homebrew a circuit mod that inhibits freq display any time the input signal is below a minimum amplitude that I would select.

I am looking for any info about how such a circuit is implemented in modern freq counters, what family of circuits are used to be usable at 600 mhz.

Suspect some of the 100 series ECL IC's from Motorola, Philips or Sony may be usable at 600 mhz. Need suggestions where to get these at low cost in small quantities...just enough for this project.

Thanks, Dave
w6mik

856. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 15:39:27 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Apr9.153927.8548@vlsi.polymtl.ca>
Source record: 118095

In article <2o3vd1$f7h@acorn.acorn.co.uk> agodwin@acorn.co.uk (Adrian Godwin) writes:

...a pile of stuff deleted...

The way we make test PCBs at work is rather simple and more importantly, QUICK.
We draw the pcb artwork using AutoCad (I mostly design microwave stuff) and
then send the file to the laser printer at 1:1. I load the laser with a sheet
of clear acetate and let the printer do it's thing. Bingo, I have a film
positive of my artwork. I then go to the lab and make a contact print on
a piece of PCB that has been sensitized with a photo resist coating. Then
the PCB goes through the normal proceedure of copper etching, cleaning, etc.

This method has allowed us to make PCB artwork with microstrip lines as small
as 7 mil (!) with good results. If you can't load the acetate material into
your laser, you can always print to a piece of paper and then photocopy the
paper onto a piece of acetate. The only problem here is that most photocopiers
do not make perfect 1:1 copies (not close enough for 2.8 GHz microstrip!).

Nick

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

857. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 19:20:05 UTC
From: greg@core.rose.hp.com
Message-ID: <Co0B1I.Dnq@icon.rose.hp.com>
Source record: 118096

Adrian Godwin (agodwin@acorn.co.uk) wrote:
: However, a halfway house (still needs messy etching but getting away from
: the problems with limited resolution of cheaper pens) might be to mill
: away only the etch-resist.

Reminds me of how I used to do PC boards many years ago (when components were big enough to see, and had leads you could count on one hand)... I coated the PC board with candle wax and used a toothpick to scribe around the traces. Warm the board first so the wax flows evenly.

Greg KD6KGW

858. Re: Small (1-5 watt?) AM transmitter.clo

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 20:02:12 UTC
From: pkinnes@csupomona.edu
Message-ID: <1994Apr9.120212.1@clstac>
Source record: 118097

In article <2o51q3$12v@vixen.cso.uiuc.edu>, cs125410@diff.csc.lsu.edu (CRAIG ALLEN JOHNSTON) writes:
-= snip... =-

> steady. So, if anyone knows where I can get a kit or some plans for
> an easily built (by a reasonably mechanical type person with a small
> amt of knowledge of electronics) transmitter, could you point me in the right
> direction?
>

Please! There's quite a bit of interest here at Cal Poly, too, so if
anyone has info, please post here on this group.

Tnx!
--
Grimm

Patrick K. Innes
Email: pkinnes@vmsa.is.csupomona.edu
"Methinks it is like a weasek"
-The (infinity - 1)st monkey

Note generic disclaimer: These views and/or opinions are mine, not those of
any sentient being or group or organization composed thereof. Thank you.
^
other

859. Notch filters and audio q

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-09 21:06:00 UTC
From: bill.shymanski@mwcsinc.muug.mb.ca
Message-ID: <1270.596.uupcb@mwcsinc.muug.mb.ca>
Source record: 118099

@SUBJECT:Notch filters and audio quality N
I'm in the middle of building some notch filters for the Morse ID on the
UHF links between our VHF repeaters; the idea is to keep the link ID's
from showing up on the VHF side and disturbing users there.

I'm using a National MF10CCN switch-capacitor filter with two sections
of notch-filter, cascaded, to suppress the 1064Hz Morse. This works
sort-of OK - right now I have the switched capacitor filter set for a Q
of only 10, cutting out a 100 HZ notch centred on 1064Hz. But...how big
a notch can I cut out without degrading speech quality ? Should I go
much smaller - the disadvantage then is that the centre frequency of the
SCF becomes more sensitive to temperature range; I don't want the Morse
showing up on hot/cold days because the oscillator drifted.

The other thing I've noticed is that I still hear the "clicks" produced
by keying the Morse; I guess either the keyers in the repeater
controllers aren't synchronized to the zero crossing, or else there's
some fundamental limitation as to how much I can expect to notch out -
the transient at the start must have frequency components other than
1064 Hz. I suspect the latter; my own 8748-based ID'er also seems
to generate the same clicks, and the way my software works it has to
key only at zero crossings (a dit is 85 cycles of 1064 hz followed
by an equal silent period, at 15 words/minute).

I had hoped for 40 dB of notch suppression but the best I've measured
so far is about 30 dB - probably adequate for our purposes. I also have
some problems with the 100x clock of the switched capacitor filter
leaking through to the output; is this unavoidable or should I revise
my circuit board layout again ? A 2-pole filter made of an LM324 seems
to keep most of the 100khz in where it belongs; hopefully the
transmitters won't attempt to send out what little of the 100khz gets
past.

I found it pretty easy to generate 1064HZ with the 8748 as a square
wave; but this has lots of harmonics. It was only a little more
difficult to make a 6-step waveform and run that through an R-2R
ladder to make a crude D/A converter - the resulting waveform only
has 5th and higher harmonics according to my calculation, making it
easier to filter. If I had enough CPU speed left I could put in an
8-bit D/A and use 255 steps/cycle but then it's hard to get the
1064 Hz frequency bang-on; since it takes the 8748 5uS to update the
output port for each step.

Bill
ve4stw
bill.shymanski@mwcsinc.muug.mb.ca

Muddy Waters Computer Society Inc. Winnipeg, Manitoba, Canada
(204)943-6507,08,09 (204)942-0227 (204)956-4997 (all nodes USR 16.8K D/S)

860. Re: Small (1-5 watt?) AM transmitter.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-10 10:10:44 UTC
From: timg@valinor.mythical.com
Message-ID: <L50Jkc1w165w@valinor.mythical.com>
Source record: 118100
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

brt581s@nic.smsu.edu (Thrailkill Berry R) writes:

> CRAIG ALLEN JOHNSTON (cs125410@diff.csc.lsu.edu) wrote:
> > Anyway, what I am looking for is plans or a kit for something to transmit
> > with. I know how to build a very simple AM transmitter, but it is
> > very primitive, and I'm sure my signal would not be very clean or
> > steady. So, if anyone knows where I can get a kit or some plans for
> > an easily built (by a reasonably mechanical type person with a small
> > amt of knowledge of electronics) transmitter, could you point me in the rig
> > direction?
>
> Just thought I'd point out that there are a few of us out here who'd
> also be very interested in this information. Please, please, _please_
> post it here!
>
> Thanks in advance...
>
> --
>
> --Me. (Berry R. Thrailkill)
> (brt581s@nic.smsu.edu)

Umm you need to call Ramsey Electronics. They sell AM and FM transmitter
kits etc..They are very good kits and cost only a couple bux $20 etc..
umm i purchased the FM-10 stereo FM kit and it is great.. just need an
amp now!!! so here's the info also there is a newsletter out of berkley
ie FRB - Free Radio Berkley they sell kits and amps also etc etc..

also if you need any more info etc.. i can uuencode a bunch of txtz i
have collected on pirate radio etc etc..

Ramsey Electronics Inc.
793 Canning Parkway
Victor, New York 14564
Phone (716) 924-4560
Fax (716) 924-4555

LOOKING FOR ANY INFO ON FM radio frequency amps.. etc SCHEMATICS !!!!!!

Tim Gross
Internet: timg@valinor.mythical.com uucp: uunet!valinor!timg
-----

861. Trigonal Beam

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-10 15:30:54 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Apr10.093054.1@ccsvax.sfasu.edu>
Source record: 118101

Does anyone have any experience with the "trigonal" wire beam that appeared in this month's _QST_? I'm thinking about flinging one up on 30m.

73
Jim
K5YUT

862. Re: PIN diodes & feedthru caps, WHERE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-10 16:25:03 UTC
From: jimn0oct@aol.com
Message-ID: <2o998v$b63@search01.news.aol.com>
Source record: 118102

In article <1994Apr8.162606.225@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP))
writes:

: I'm in the building mode again, and I'm looking for the above parts via
: mailorder. Mouser, Digi-Key and Allied aren't any help, who is?
: 73, Galen, KF0YJ

You might try Dan;s Small Parts and kits
1935 So. 3rd West #1
Missoula, MT 59801
Phone 1.406.543.2872

You also might try Newark electronics, they carry a full line of Motorola stuff
and seem alittle more geared to RF.............

73 de JimN0OCT

863. Definition of "ripple" in filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-10 23:08:27 UTC
From: jjw@seastar.org
Message-ID: <Co2GA4.BwJ@seastar.org>
Source record: 118103

What, precisely, is meant by 'ripple' in a filter? IE if I
have a filter that, within the passband, the insertion loss varies
from 2.6db to 1.1db, is this 1.5db of ripple, or .75db?
Also, then, how does one determine the -3db edges? Is that
-3db from the average of high and low within the passband?
I *think* I've built a filter adequate for SSB - 2.5khz wide
with 1.5 (or .75) db of ripple, that's 32db down from the average of
high&low only 600 Hertz away. I'd like to know how to correctly
describe it. Thanks.
--
While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org

864. Morse Code for links... (was Notch filters and audio...)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 03:25:51 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Apr11.032551.26424@vlsi.polymtl.ca>
Source record: 118104

In article <1270.596.uupcb@mwcsinc.muug.mb.ca> bill.shymanski@mwcsinc.muug.mb.ca (Bill Shymanski) writes:

...stuff deleted...

>I found it pretty easy to generate 1064HZ with the 8748 as a square
>wave; but this has lots of harmonics. It was only a little more
>difficult to make a 6-step waveform and run that through an R-2R
>ladder to make a crude D/A converter - the resulting waveform only
>has 5th and higher harmonics according to my calculation, making it

Bill:

Instead of generating the Morse code tone with the micro, why don't you just provide an output from the micro that keys an audio oscillator on and off. To me, this would be simpler to code. An audio oscillator can be made from 1 section of a Schmitt inverter section. I recently published an article in QEX about generating morse code in this fashion. This is just my 2 cents worth. Oh yeah, it was the Feb/94 issue of QEX. 73, Nick

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

865. Eprom 27C512 with access time of 120 ns

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 13:27:20 UTC
From: seeler@UPEI.CA
Message-ID: <seeler.100.766070840@UPEI.CA>
Source record: 118105

Hi _ I was wondering if anyone knew of a distributor or supplier of
27C512 Eproms which have an access time of 120 nanoseconds or less in a
DIP package). The books available to me do not currently list these items.

Also - if anyone is aware of a US or Canadian distributer of the Dallas
Semiconductor microprocessor - DS80C320, I would appreciate the name
and/or number.

Thank you in advance for this information ,

Dave Seeler, VY2DCS
Internet: Seeler@upei.ca

866. Feed-thru caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 14:20:36 UTC
From: Waltk@pica.army.mil
Message-ID: <9404111020.aa15394@COR5.PICA.ARMY.MIL>
Source record: 118106

>I'm in the building mode again, and I'm looking for the above parts via
>mailorder. Mouser, Digi-Key and Allied aren't any help, who is?
>73, Galen, KF0YJ

Try Radiokit, owned by Carl, KM1H, in NH. Or try Ocean State Electronics in RI.
Look in the mags for an addr or phone#. 73 de Walt - K2WK

867. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 16:50:53 UTC
From: David DiCarlo <r14793@waccvm.sps.mot.com>
Message-ID: <1994Apr11.165053.10134@newsgate.sps.mot.com>
Source record: 118107

In an earlier post, it was mentioned that ironing a laser print on a copier-usable transparency sheet would work as an etch mask.

Well, I tried it this weekend by photocopying on to a sheet of transparency
and ironing that onto the copper. I did no have any pc-board cad capability
and it was faster to just copy the patterns out of the magazine (using the
center of the field on the copier for lower distortion). It worked, kind of.

My question is, what iron temperature was used and was the transparency peeled
off hot or cold? I used 1 sheet of paper between the iron and the transparency.

--dave dicarlo
r14793@waccvm.sps.mot.com

868. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 16:53:20 UTC
From: David DiCarlo <r14793@waccvm.sps.mot.com>
Message-ID: <1994Apr11.165320.10260@newsgate.sps.mot.com>
Source record: 118108

In an earlier post, it was mentioned that ironing a laser print on a copier-usable transparency sheet would work as an etch mask.

Well, I tried it this weekend by photocopying on to a sheet of transparency
and ironing that onto the copper. I did no have any pc-board cad capability
and it was faster to just copy the patterns out of the magazine (using the
center of the field on the copier for lower distortion). It worked, kind of.

My question is, what iron temperature was used and was the transparency peeled
off hot or cold? I used 1 sheet of paper between the iron and the transparency.

--dave dicarlo
r14793@waccvm.sps.mot.com

869. Re: Small (1-5 watt?) AM transmitter.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 19:05:08 UTC
From: trier@slc6.ins.cwru.edu
Message-ID: <2oc715$m8f@usenet.INS.CWRU.Edu>
Source record: 118109

In article <L50Jkc1w165w@valinor.mythical.com>,
Tim Gross <timg@valinor.mythical.com> wrote:
>LOOKING FOR ANY INFO ON FM radio frequency amps.. etc SCHEMATICS !!!!!!

Schematics are all over the place. The _ARRL Handbook for the Radio Amateur_ has good introductory information on amplifiers. _Solid State Design for the Radio Amateur_ is a classic technical book about radio, including amplifiers.

Of course, this assumes you mean the ham bands. You _do_ plan to use this on the ham bands with your FCC-issued ham radio license, don't you?

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quoi."
Home: sct@po.cwru.edu - Peter Schickele

870. Re: Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 19:59:10 UTC
From: elliott@optilink.dsccc.com
Message-ID: <Co426M.Kwr@optilink.com>
Source record: 118110

In article <2o5u5p$uk@proffa.cc.tut.fi>,
Kein{nen Paul <k23690@proffa.cc.tut.fi> wrote:
>
>Tom Bruhns (tomb@lsid.hp.com) wrote:
>
>> Alvin Nor Mortensen (mortense@matt.ksu.ksu.edu) wrote:
>> : I'm in the process of building a VHF synthesizer. I had originally
>> : planned on using DDS to provide the reference to a PLL multiplier.
>> : Unfortunately the chip (AD7008 -> Great chip!) doesn't seem to be
available
>> : with out a significant lead time. I'm considering just rolling my own
>> : using the MSB of the phase word as my "DAC". Has anyone tried this?
>> : Any problems from the spurs ... ? Any thoughts ...?
>
>> Lots of spurs lurking about out there on this one. Consider a
>> clock at 40MHz, used to generate a DDS signal at 10MHz. If it's
>> _exactly_ 4:1 division, there won't be any jitter on the output.
>> But if you want 10.000 + or - a little, then most of the time
>> you divide by 4, but sometimes you divide by 3 or 5, getting to
>> the MSB. This means that the spectral purity of the output is
>> very poor.
>
>Can anybody estimate the spectral distribution of these spurs ?
>
>The far-out spurs are filtered out by the low-pass filter in the
>PLL multiplier anyway, so all you have to worry about are the
>close-in spurs. It depends on the response time requirements
>of the PLL multiplier how much close-in spurs can be removed.

The spectral distribution of the spurs in a DDS system can be pretty
easily estimated. It helps to consider the DDS output as a sampled
waveform -- usually a sinewave, but in Alvin's case (using the MSB
of the phase word), it is as if he were sampling a squarewave with
his DDS sample clock.

In the case of a typical sinewave look-up-table (LUT) driving
a D-to-A converter, you can determine the spectral content of
the raw output waveform: a stepwise approximation of a sinewave,
being quantized in both phase and amplitude. No doubt there is
a nice analytical method of deriving the spectrum, but I just
use a long FFT to get it. The are additional dynamic and static
non-linearities caused by non-ideal D-to-A converter characteristics,
but in my work, these haven't been dominant factors. in applications
where extreme spectral purity is important (local oscillators, for
example), you probably shouldn't ignore these.

In the proposed case of a squarewave, the spectrum is easy:
All odd harmonics, dropping linearily with their order (the
Fourier series for a square wave).

Having determined the basic un-sampled spectrum, you then
sample it and see what happens. This is a modulation process,
just like a radio's local oscillator:

Let the desired output frequency be F1, say 1 MHz for example.
Give it an amplitude of 1.0V

The harmonics of the basic waveform have to be accounted for also:
2nd Harmonic = F2, for a square wave, 2 MHz, 0V
3rd Harmonic = F3, 3MHz, 0.333V
5th = F5, 5MHz, 0.2V
(etc, until the amplitudes become insignificant for the application)

Let the DDS sample frequency be Fc, how about 4.096 MHz.
The output will be :
F1, Fc + F1, Fc - F1, 2Fc + F1, 2Fc - F1, (etc)
F2, Fc + F2, Fc - F2, 2Fc + F2, 2Fc - F2, (etc)
(etc)

You have to apply a sinx/x correction to these modulation products as well.

Note that many of the higher-order harmonics, when sampled, will get
folded back (aliased) into the frequency range of interest. When
the sample clock is a multiple of the output frequency, the harmonics
all fall at 0Hz or the desired output frequency, so they don't affect
the spectral purity (as Tom mentions.)

It is interesting that as the output frequency is changed, the higher-order
spurs shift in frequency faster than the fundamental output does. This can
be used to advantage in some applications by applying a pseudo-noise frequency
modulation to the DDS frequency-control word. This smears the spurious signals
across a wider bandwidth without affecting the desired output much. Kinda the
way a carrier is spread out and the narrow-band amplitude is reduced using
spread-spectrum modulation. I haven't tried this myself, though.

I wrote a program to do the number-crunching and show a spectrum-analyzer
type display, to help me when I use DDS techniques to synthesize digital
clocks for tele/data-com equipment. We are extremely concerned with
jitter (short-term variations in clock phase/frequency) in these products,
so my program applies any filtering I specify to the spectrum, then sums
the amplitudes of the spurs and calculates their impact on the zero-crossing
of the desired output signal -- thus giving me a predicted jitter for any
clock relationship and filter shape.

Unfortunately, right now I have a canned waveform (a sinewave with 256 phase
steps, 32 amplitude steps), so I can't run the squarewave example. If there
is interest, I could hack it to make it more general...

So, in conclusion: What Tom said. Unless you have a carefully chosen frequency
ratio, the high-order harmonics of the sampled square wave (the MSB) will sneak

back and bite you.

--
-------- Paul Elliott - DSC Optilink - Petaluma, CA USA ----------
{uunet,pyramid,tekbspa}!optilink!elliott -or- elliott@optilink.dsccc.com
"If I had known it was harmless I would have killed it myself." -PKD

871. Re: Notch filters and audio q

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-11 20:12:26 UTC
From: alanb@sr.hp.com
Message-ID: <Co42ss.Gqy@srgenprp.sr.hp.com>
Source record: 118111

Bill Shymanski (bill.shymanski@mwcsinc.muug.mb.ca) wrote:
: @SUBJECT:Notch filters and audio quality N
: I'm in the middle of building some notch filters for the Morse ID on the
: UHF links between our VHF repeaters; the idea is to keep the link ID's
: from showing up on the VHF side and disturbing users there.

: I'm using a National MF10CCN switch-capacitor filter with two sections
: of notch-filter, cascaded, to suppress the 1064Hz Morse. This works
: sort-of OK - right now I have the switched capacitor filter set for a Q
: of only 10, cutting out a 100 HZ notch centred on 1064Hz. ...

: The other thing I've noticed is that I still hear the "clicks" produced
: by keying the Morse; I guess either the keyers in the repeater
: controllers aren't synchronized to the zero crossing, or else there's
: some fundamental limitation as to how much I can expect to notch out -
: the transient at the start must have frequency components other than
: 1064 Hz.

That's right. Any modulation (including on-off keying) widens the bandwidth.
You can help the situation by "softening" the keying of the CW ID'er.
You can do that eigher by slowing the rise/fall times or by running
the 1064 Hz signal through a narrow band-pass filter.

Another solution is to use a DSP-based notch filter like the W9GR unit.
It automatically finds all coherent carriers in the audio passband and
notches them all out simultaneously. That way, you wouldn't have to
worry about frequency drift between the oscillator and notch. It also
automagically removes DTMF tones, whistles, etc. It won't eliminate
the key clicks, though, because it takes a few milliseconds to
acquire each tone.

AL N1AL

872. Intermodulation and Switching Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 01:56:46 UTC
From: drew@trl.oz.au
Message-ID: <drew.118.0@trl.oz.au>
Source record: 118112

A recent posting asked about the possible intermodulation effects of using diodes to switch front-end filters in a planned receiver project. Ulrich Rohde's "Recent Advances in Shortwave Receiver Design" (QST 'Nov. '92)-(also follow-up discussion in Technical Topics, Radio Communication Feb '93) was pointed.

Here is another topical paper on the subject:

"Intermodulation Properties of Switching Diodes"

Dr. (Eng) Jochem Jirmann, DB1NV, VHF Communications, 1/94.

Includes schematic of his test set up, graphs of intermod. products for second and third-order, current bias levels vs. intermod. interval for typical European diodes and summary of results. Also a brief discussion on intermod. and front-end inductances.

His bibliography reference is;

"Improvement in Intermodulation Behavior of Modern Short-Wave Amateur Receivers"

Dr J. Jirman and W. Hercher, DL8MX, VHF Comms 1/93.

73, Drew, VK3XU.

873. Green Card Lottery- Final One?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 08:13:46 UTC
From: nike@indirect.com
Message-ID: <2odl7q$48k@herald.indirect.com>
Source record: 118113
Cross-posted to: rec.radio.amateur.homebrew,wpi.spanish

Green Card Lottery 1994 May Be The Last One!
THE DEADLINE HAS BEEN ANNOUNCED.

The Green Card Lottery is a completely legal program giving away a certain annual allotment of Green Cards to persons born in certain countries. The lottery program was scheduled to continue on a permanent basis. However, recently, Senator Alan J Simpson introduced a bill into the U. S. Congress which could end any future lotteries. THE 1994 LOTTERY IS SCHEDULED TO TAKE PLACE SOON, BUT IT MAY BE THE VERY LAST ONE.

PERSONS BORN IN MOST COUNTRIES QUALIFY, MANY FOR FIRST TIME.

The only countries NOT qualifying are: Mexico; India; P.R. China; Taiwan, Philippines, North Korea, Canada, United Kingdom (except Northern Ireland), Jamaica, Domican Republic, El Salvador and Vietnam.

Lottery registration will take place soon. 55,000 Green Cards will be given to those who register correctly. NO JOB IS REQUIRED.

THERE IS A STRICT JUNE DEADLINE. THE TIME TO START IS NOW!!

For FREE information via Email, send request to cslaw@indirect.com

--
****
Canter & Siegel, Immigration Attorneys
3333 E Camelback Road, Ste 250, Phoenix AZ 85018 USA
cslaw@indirect.com telephone (602)661-3911 Fax (602) 451-7617

874. Re: Small (1-5 watt?) AM transmitter.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 11:53:02 UTC
From: jimn0oct@aol.com
Message-ID: <2oe22u$co2@search01.news.aol.com>
Source record: 118021

In article <L50Jkc1w165w@valinor.mythical.com>, timg@valinor.mythical.com (Tim Gross) writes:

>so here's the info also there is a newsletter out of berkley
>ie FRB - Free Radio Berkley they sell kits and amps also etc etc..

I would like information on how to get ahold of a copy of this newsletter--please email the info, if you could. Thanks!

73 de JimN0OCT

875. MRF 472 Device Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 12:48:03 UTC
From: jimn0oct@aol.com
Message-ID: <2oe5a3$d5c@search01.news.aol.com>
Source record: 118022

Does anyone have detailed device data bout this discontinued RF amplifier? I would appreciate internal capacitance ratings, FT, and max voltage and current values. Thanks much

73, de JimN0OCT

876. Re: Antique radio and gramophone restoration

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 13:13:12 UTC
From: jal@cray.com
Message-ID: <1994Apr12.081313.7253@ned.cray.com>
Source record: 118114

There are often threads on these subjects on rec.antiques. They often talked about splitting off, but haven't yet.

Hope this helps.

Jim Lindberg
jal@cray.com

877. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 15:00:52 UTC
From: mac20@ciao.cc.columbia.edu
Message-ID: <2oed34$3vo@apakabar.cc.columbia.edu>
Source record: 118115

I don't happen to have the information in front of me but i noticed,
and bought, an interesting item from Digikey the other month.
it's something called the Toner Transfer System which consists of
specially formulated sheets to laser-print onto and then iron onto a
pc board for immediate etching. i have not had the chance to actually
try this yet but they did seem to readily achieve double traces
through 100mil through holes.

it also contains instructions that mention various fine points
including carefully ironing (pretty big iron to compensate for large
heat sinking of copper clad board) and "super-charged" toner
cartridges that they highly recommend.

they also sell various pieces of equipment such as a highly modified
lamenating machine that does the ironing for you. not too cheap
though.

i'll get the name, # etc. later but try your digi-key catalog near the
homebrewing section of course.

Mike Cecere KF2NV
Applied Physics Department
Columbia University

878. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 17:54:38 UTC
From: agodwin@acorn.co.uk
Message-ID: <2oen8u$mn1@acorn.acorn.co.uk>
Source record: 118116

In article <1994Apr9.153927.8548@vlsi.polymtl.ca> nick@vlsi.polymtl.ca (nick ciarallo) writes:
>
>The way we make test PCBs at work is rather simple and more importantly, QUICK.
>We draw the pcb artwork using AutoCad (I mostly design microwave stuff) and
>then send the file to the laser printer at 1:1. I load the laser with a sheet
>of clear acetate and let the printer do it's thing. Bingo, I have a film

etc ..

Yes, I appreciate this is a popular and reasonably successful method.
The plot-on-PCB scheme, though, is deliberately intended to (a) use a cheap second-hand plotter instead of an expensive modern laser printer, and (b) avoid the photographic stage. As Gary said, it would be even better to avoid the etch stage too.

It isn't necessarily the best system, and if you have a laser printer and no plotter, it may well be better to use that. Homebrew (IMHO) is all about doing it with what's in the garage or the junk sale, rather than buying anything new ! Extra points if you don't have to rely on the goodwill of your employers, too.

Having said that, I've tried making artworks on a laser printer and had mixed success - the lines came out 'fluffy' and with holes in them, as though the toner had shrunk together through surface tension. I think this is a problem with the mobility of toner particles on plastic film as opposed to paper, and suspect that some toner/printer/film combinations work better than others. I'd be interested to know what works best.

-adrian

879. Ctr Fed ZEP length?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 19:52:23 UTC
From: pete@wybbs.mi.org
Message-ID: <Co5wJD.L6I@wybbs.mi.org>
Source record: 118117

What's the best length for a Center Fed Zepp antenna? I'd like it good
for all Novice bands, especially 80M and 15M. I have one up now, but I think
my length isn't right. It's cut like a 80M dipole now (I think).
--
-=-
Pete Hoffswell N9SSA Internet: pete@wybbs.mi.org
Holland, Michigan 616-395-5551 Packet: n9ssa@wa8ure.#swmi.mi.usa.na
-=-

880. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 20:13:20 UTC
From: mac20@namaste.cc.columbia.edu
Message-ID: <2oevd0$m8g@apakabar.cc.columbia.edu>
Source record: 118018

the name of the company for this Toner Transfer System is
DynaArt Designs
(805) 943-4746
they have a real neat little catalog for the homebrew type.

what sounds intrigueing is how they say that the process of ironing
the ink from the transfer onto the PCB anneals the gunk so that minor
holes created by imprefect laser printing can get melted over. they
also mention how one client used acetone i think to harden the surface
of the ink for better etching and to fill in micro-holes.
also they mention attaching a big chunk of aluminum to an iron to
distribute the heat better and i feel to increase the iron's heat
capacity so the PCB doesn't cool it down so quickly.
there were other interesting tid-bits in the catalog also.

still have yet to try this paper myself.
maybe in a week or two. (or three, or four....)

Mike Cecere KF2NV
Applied Physics Department
Columbia University

881. Re: Cheap skate DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 21:28:22 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <2of3pm$4j2@proffa.cc.tut.fi>
Source record: 118020

Paul Elliott (elliott@optilink.dsccc.com) wrote:

[Using the MSB of the phase accumulator in a DDS as the reference
frequency for a PLL frequency multiplier]

> The spectral distribution of the spurs in a DDS system can be pretty
> easily estimated. It helps to consider the DDS output as a sampled
> waveform -- usually a sinewave, but in Alvin's case (using the MSB
> of the phase word), it is as if he were sampling a squarewave with
> his DDS sample clock.

> ...

> In the proposed case of a squarewave, the spectrum is easy:
> All odd harmonics, dropping linearily with their order (the
> Fourier series for a square wave).

> Having determined the basic un-sampled spectrum, you then
> sample it and see what happens. This is a modulation process,
> just like a radio's local oscillator:

> . . .

> You have to apply a sinx/x correction to these modulation products as well.

I had a program for calculating high order IMD products in amplifiers
and mixers. I modified it a bit to handle the amplitude distribution
of the DDS output frequency harmonics and applied the sinx/x correction
to the spurs. Now it is easy to try out some interesting cases.

> Note that many of the higher-order harmonics, when sampled, will get
> folded back (aliased) into the frequency range of interest. When
> the sample clock is a multiple of the output frequency, the harmonics
> all fall at 0Hz or the desired output frequency, so they don't affect
> the spectral purity (as Tom mentions.)

On the other hand, if you stay away from these frequencies (at least a
few kHz away from them), the spurs are distributed far away from the
output frequency and no close-in spurs are present.

Assuming we need a synthesiser for the 144 - 148 MHz band with 1 Hz
steps. If we use a PLL multiplier with a fixed by 100 multiplier, we
need a DDS reference capable of producing 1.44 - 1.46 MHz in 0.01 Hz
steps. A 29 bit DDS (MSB output only) clocked at about 5.369 MHz
could do the job. I checked the whole tunning range, and I couldn't
find any spurs (at least 20th order or less) in the range 1.2 - 1.8 MHz.
A modest band-pass filter should be enough to prevent the PLL multiplier
to lock on these spurs below 1.2 or above 1.8 MHz.

The PLL loop bandwidth would typically be a few kHz and as the closest spurs are at least 200 kHz from the reference frequency, it should be easy to filter it out in the PLL loop filter.

> So, in conclusion: What Tom said. Unless you have a carefully chosen
> frequencyratio, the high-order harmonics of the sampled square wave
> (the MSB) will sneak back and bite you.

Yes, this happened to me, when I tried to expand the tunning range to 1.4 - 1.5 MHz.

In Electronics World+Wireless World October 1992 on page 843 there is a similar system. The DDS is used for fine tunning on a very narrow band near 10 MHz and it is used as the reference for the PLL producing outputs in VHF or UHF. The PLL that has a variable multiplier for coarse tunning. As the multiplier is varied, the step size will also vary. If you need a constant step size across the whole VHF/UHF output range, a few more bits are required at the DDS and only those input words are used that approximate the required step size.

Paul OH3LWR

882. Re: Small (1-5 watt?) AM transmitter.clo

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-12 21:32:18 UTC
From: waf@sunfish.zk3.dec.com
Message-ID: <WAF.94Apr12173218@sunfish.zk3.dec.com>
Source record: 118019

You all know that you need the landlord's (university's)
permission to run a carrier current station, don't you?
--
Bill Freeman, waf@zk3.dec.com, KE1G, PP-SMEL-IA(ME VFR only) N4365Z
USABDA, MassABDA (novice modern), NMRA, rounds, squares, bad jokes.
Telemarketing: Do more than just say no, write saying you seek other vendors.

883. Simple AM transmitter circuit needed urgently

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 06:40:38 UTC
From: s9328955@rkw-risc.cs.up.ac.za
Message-ID: <2og456$f09@inet.up.ac.za>
Source record: 118023

I need a simple AM circuit, pronto, it doesn't need to be very powerful, it just needs to basically transmit AM... Please can someone help?

884. Re: Green Card Lottery- Final One?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 06:53:26 UTC
From: MSUORANTA@FINABO.ABO.FI
Message-ID: <1994Apr13.065326.28563@abo.fi>
Source record: 118026

In <2odl7q$48k@herald.indirect.com> nike@indirect.com writes:

> Green Card Lottery 1994 May Be The Last One!
> THE DEADLINE HAS BEEN ANNOUNCED.

(deleted)

> **********
> Canter & Siegel, Immigration Attorneys
> 3333 E Camelback Road, Ste 250, Phoenix AZ 85018 USA
> cslaw@indirect.com telephone (602)661-3911 Fax (602) 451-7617

Sorry for posting an article not related to ham radio as a
hobby.. but it how many news groups have you seen this? So
far I have seen it in all unmoderated groups... this beats
all such previous "postings"... I have already sent an e-mail
to those people... maybe you should do the same!

73 Mika OH1NZQ

885. Output power measurement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 10:33:03 UTC
From: bord@mdd.comm.mot.com
Message-ID: <9404131033.AA03953@bord.mdisea>
Source record: 118024

I am wondering how to measure an output power greater than 1kW on VHF using a
BIRD 43.
There is a BIRD slug available but that's a 2.5kW peak one.
Does anyone know the subtile meaning about this 'peak' notice.

Regards
Jean-marc

mail : Jean-Marc BORD-C15201@email.com

dsphdi

886. Re: Definition of "ripple" in filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 11:04:19 UTC
From: blair@mksol.dseg.ti.com
Message-ID: <1994Apr13.110419.22204@mksol.dseg.ti.com>
Source record: 118025

John Welch (jjw@seastar.org) wrote:
: What, precisely, is meant by 'ripple' in a filter? IE if I
: have a filter that, within the passband, the insertion loss varies
: from 2.6db to 1.1db, is this 1.5db of ripple, or .75db?

1.5 dB is right. The term "ripple" comes from the fact that an
ideal chebyshev filter (one of the more popular designs) has
an almost sinusoidal reponse in band.
: Also, then, how does one determine the -3db edges? Is that
: -3db from the average of high and low within the passband?

Generally from the peak in band point, though the definition is
not set in concrete for anything but butterworth type filters.
Art.
--
"Television is chewing gum for the eyes" - Frank Lloyd Wright
Dont forget to vote in news.announce.newgroups !

887. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 12:19:17 UTC
From: pvr@wang.com
Message-ID: <Co7688.Arz@wang.com>
Source record: 118031

mac20@namaste.cc.columbia.edu (Michael A Cecere) writes:

>the name of the company for this Toner Transfer System is
>DynaArt Designs
>(805) 943-4746
>they have a real neat little catalog for the homebrew type.

>what sounds intrigueing is how they say that the process of ironing
>the ink from the transfer onto the PCB anneals the gunk so that minor
>holes created by imprefect laser printing can get melted over. they
>also mention how one client used acetone i think to harden the surface
>of the ink for better etching and to fill in micro-holes.
>also they mention attaching a big chunk of aluminum to an iron to
>distribute the heat better and i feel to increase the iron's heat
>capacity so the PCB doesn't cool it down so quickly.
>there were other interesting tid-bits in the catalog also.

The problem with both of the toner transfer systems that I tried,
transfer film and sugar paper, is that the traces mush outward as
you iron them onto the copper. If your design has fairly close
trace spacings then they will short. A device that applied a very
even pressure at a precise temperature would probably work well but
an iron is just too crude for good results.

A technique that I tried and got better results on small boards
is to use ordinary copier paper. It does not have the problem
with trace mush. Try this;

* Iron your pattern onto the board with the iron temp. set to max.
* Lift the iron off the board for a second. Put a paper towel
saturated in water on the paper and put the iron down as fast
as possible.
* Iron the wet towel for a few seconds. Do not dry out the water,
it should still be boiling when you are done.
* Put the board with the paper still attached in a pan of water and
leave for a few minutes until the paper is completely soaked.
* Rub the paper with your fingers under water so as to disintegrate
the paper.
* Inspect the board for remaining paper between close traces. You
can use a tooth brush or tooth pick to open up blocked areas.

You will notice that the toner is securely attached to the copper
but has fibers from the paper still imbedded in it's surface. This
will not bother etching so long as they are not matted onto the
copper.

The purpose of the wet towel is to drive steam into the paper
causing the paper to expand. Without this step the paper contracts
as it cools and pulls the toner off the copper.

Good luck, Pete.

--
-->>>>>>>>>> Peter Reilley ..... pvr@wiis.wang.com ..... KA1LAT <<<<<<<<<<--
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

888. Re: Frequency Counter Circuit Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 12:55:24 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr13.125524.4469@ke4zv.atl.ga.us>
Source record: 118027

In article <".9-Apr-94..6:34:05.PDT".*.D.R._Shalita.ES_AE@Xerox.com>
David_Shalita.ES_AE@xerox.com writes:
>
>I would like to homebrew a circuit mod that inhibits freq display
>any time the input signal is below a minimum amplitude that
>I would select.

What you need is a Schmidt trigger circuit near the input stage, at least before the counter ICs, if after the prescaler. For a 600 MHz counter, that would be a 60 MHz Schmidt. If it has to be threshold adjustable, the easiest way is to implement it with discrete transistors. Any good VHF switching transistor should be fine for the job. Just set the bias threshold wherever you want readings to commence.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

889. Re: Ctr Fed ZEP length?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 13:07:22 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr13.130722.4574@ke4zv.atl.ga.us>
Source record: 118028

In article <Co5wJD.L6I@wybbs.mi.org> pete@wybbs.mi.org (Pete Hoffswell) writes:
>What's the best length for a Center Fed Zepp antenna? I'd like it good
>for all Novice bands, especially 80M and 15M. I have one up now, but I think
>my length isn't right. It's cut like a 80M dipole now (I think).

80 meter 1/2-wave Zepps present a difficult impedance to match at 15
meters. An old rule of thumb flattop length for all the HF bands is
105 feet. That will present a feed impedance within the range of most
good open wire balanced tuners on all bands.

If you're using an unbalanced tuner and a balun on the output, then
all bets are off. That often doesn't give you a large enough (efficient)
matching range for an all band flattop. Use a balanced tuner, and if you
must, use a 1:1 balun on the *input* side of the tuner where it'll work
efficiently. There are tuner topologies that do the unbalanced to balanced
transform internally so you don't need a balun at all, but they're typically
a bit more complex and require more unusual components such as swinging
links. (These are actually great if you don't mind the mechanical challenges
involved in building them.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

890. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 13:10:02 UTC
From: jimn0oct@aol.com
Message-ID: <2ogqva$2bc@search01.news.aol.com>
Source record: 118030

the best commonly available plastic to use in the laser printer would be the kind that is designed to be run through copiers to make overhead projectoer films. I have has some success with this. The Tech-2000 stuff didn't work at all.

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

891. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 13:13:58 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr13.131358.4730@ke4zv.atl.ga.us>
Source record: 118029

In article <1994Apr11.165053.10134@newsgate.sps.mot.com> David DiCarlo
<r14793@waccvm.sps.mot.com> writes:
>
>In an earlier post, it was mentioned that ironing a laser print on a
>copier-usable transparency sheet would work as an etch mask.
>
>My question is, what iron temperature was used and was the transparency
>peeled
>off hot or cold? I used 1 sheet of paper between the iron and the
>transparency.

Use an iron set on "cotton", or it's highest setting whatever that's
called. I iron the transfers on with an old Tee shirt as a buffer.
Use a *lot* of pressure on the iron. Wait until it cools before peeling
off the film. The copper must be *very* clean for this to work well,
scrub with Comet before doing the transfer.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

892. Re: Green Card Lottery- Final One?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 16:51:22 UTC
From: faunt@netcom6.netcom.com
Message-ID: <FAUNT.94Apr13095122@netcom6.netcom.com>
Source record: 118039

It's been in lots of groups, it appears that his account on indirect has been disabled, but my suggestion is that someone in Arizona let the Bar Association know about this.

893. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 17:52:50 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr13.175250.7004@ke4zv.atl.ga.us>
Source record: 118032

In article <2ogqva$2bc@search01.news.aol.com> jimn0oct@aol.com (JimN0OCT) writes:
>the best commonly available plastic to use in the laser printer would be the
>kind that is designed to be run through copiers to make overhead projectoer
>films. I have has some success with this. The Tech-2000 stuff didn't work at
>all.

Don't know about Tech-2000, but TEC-200 film works OK. But as you note,
Avery overhead transparency film works fine, and is cheaper and easier
to get.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

894. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 18:08:29 UTC
From: ed@fore.com
Message-ID: <Co7ME6.lw2@fore.com>
Source record: 118033

I have used this to make prototype double sided pcboards.

I got better results by printing pattern to paper then
shooting with accurate photocopier. You can lay the clear
page over top of the original to check for accuracy.

I was doing double sided boards. The biggest problem I had was
protecting the toner layer until I got the "Iron ons" home.

I used wifes standard steam Iron.

Drilling the holes was no joy either. For prototypes its good.
If you want to make something double sided, & through hole
I would recommend Ironing on 1 side, drilling holes In the corners
and using the holes to line up on for the second side.
You WILL HAVE to use a lacquer pen to touch up scratches & holes
& lift backs before etching. But it beats hand drawing the thing.

I think that if you are making more than 5 of the same, use
the photographic process.

Ed@fore.com

895. Re: Directly plotting etch-resist on PC boards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 19:36:37 UTC
From: alanb@sr.hp.com
Message-ID: <Co7qH1.3KA@srgenprp.sr.hp.com>
Source record: 118034

David DiCarlo (r14793@waccvm.sps.mot.com) wrote:

: Well, I tried it this weekend by photocopying on to a sheet of
: transparency and ironing that onto the copper. ...

I'm surprised nobody mentioned the ready-made kit you can buy
specifically intended for this application. It uses a
specially-coated paper so that after you iron it onto the PC board
the paper soaks off in a pan of water, leaving the toner behind as
resist. You then etch the board in the normal way.

The pattern can be laid down on the paper using a photocopier
or laser printer.

The only tricky part is that the board must be completely clean and
scoured with fine steel wool. The steel wool seems to roughen the
copper so the toner sticks better. Another trick is to soak the
board with the paper side down. Otherwise, the paper can pull off
some toner as the paper floats up.

: My question is, what iron temperature was used and was the transparency
: peeled off hot or cold? I used 1 sheet of paper between the iron and the
: transparency.

Seems like the hotter the better. I haven't had any trouble with
toner smearing or widening of the traces.

I bought my kit (with 5 sheets of 8-1/2 x 11" paper) for $12.95 from:

DC Electronics
POB 3203
Scottsdale, AZ 85257
800-467-7736
800-423-0070

AL N1AL

896. Tubes wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-13 21:52:22 UTC
From: David=Douglas%CF=Dev%Sys=Hou@bangate.compaq.com
Message-ID: <76627034234n12@131.168.114.12>
Source record: 118035

Wanted:

Any quantity of new or used vacuum tubes to assist me in my
hobby of restoring tube-type receivers.

David, KA5MSL

Pse reply via EMAIL or (713) 378-7014, (713) 627-8813.

897. - RAMSEY PROBLEMS - HELP -

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 01:13:46 UTC
From: cgarner@romulus.ncsc.mil
Message-ID: <2oi5ca$qq2@romulus.ncsc.mil>
Source record: 118036
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I have a problem with my Ramsey FX-223 220 Mhz amateur radio.
The receiver has a pronounced squeal when unsquelched and the
demodulated audio is extremely distorted. I suspected an IF
problem, and the Tech Support staff suggested I send these parts
in for testing:

Part# Quantity Description

Y1 1 21.855 MHz 2nd Oscillator Crystal
FL1 1 21.4 MHz 1st IF Filter
FL2,FL3 2 455kHZ 2nd IF Crystal Filters

I sent these parts in to Ramsey and they sent them back and told
me that there was no problem with them. I would appreciate some help
from anyone who has experienced a similar problem or has a suggestion.
Feel free to E-mail direct or post back to this thread.

Carson (N7VDY)

--
* * Some day I will show my power by making all *
* cgarner@romulus.ncsc.mil * the ants in the world jump up and down at *
* * the same time. *

898. HELP : DSP FM transmitter/receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 02:36:57 UTC
From: plee@ux1.cso.uiuc.edu
Message-ID: <2oia89$n6s@vixen.cso.uiuc.edu>
Source record: 118037

This been the largest information system in the world, I thought I can
ask for information/advice on building FM transmitter/receiver with DSP
microprocessor chips.
I specially need advice on FM detection algorithms.

Any help would be greatly appreciated.

Peter Lee / l \~-_
URH 264 Townsend ,----~~~~~+-----`--~----____
1010 W. Illinois St. @ /~_~\ | ~ | /~_~\~~~-,
URBANA, IL 61801 _ ((_)) _______| ((_))_-~
(217) 332-4091 ~~___/~~~~~~~~~~~~~~~___/
Internet: p-lee5@uiuc.edu

--
P. Lee

899. Re: Ctr Fed ZEP length?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 05:37:42 UTC
From: Cecil Moore <cecilmoore@delphi.com>
Message-ID: <RmwOSJm.cecilmoore@delphi.com>
Source record: 118038

Pete Hoffswell <pete@wybbs.mi.org> writes:

>What's the best length for a Center Fed Zepp antenna? I'd like it good
>for all Novice bands, especially 80M and 15M. I have one up now, but I think
>my length isn't right. It's cut like a 80M dipole now (I think).
>--
>-=-
>Pete Hoffswell N9SSA Internet: pete@wybbs.mi.org
>Holland, Michigan 616-395-5551 Packet: n9ssa@wa8ure.#swmi.mi.usa.na
>-=-

Pete, the length really doesn't matter as long as your antenna tuner can
give a conjugate match. 100-105 ft. is popular. My 88 ft. works just fine
on 75m. It should be at least 3/8 wavelength on the lowest transmit freq.

73, KG7BK, CecilMoore@delphi.com

900. POWER TRANSFORMER HELP NEEDED!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 07:55:30 UTC
From: x90galbrait1@wmich.edu
Message-ID: <1994Apr14.025531.17157@wmichgw>
Source record: 118040

Hello!

I just picked up an old (early 70s) Bell & Howell tube-type scope.
It was cheap, but the power transformer is SHOT (it snap, crackles, and pops).
There is no manufacturer printed on it, but there is a model #.
I do not know what the secondaries are wound for, except there are twelve leads
coming out of the transformer (2 being the 117vac in).

Is there somewhere I can get a replacement?
Is there someone who will rewind it?

Any help would be returned by countless blessings!

73, Chris, KA8WFC

901. Re: Output power measurement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 09:51:51 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr14.095151.10768@ke4zv.atl.ga.us>
Source record: 118041

In article <9404131033.AA03953@bord.mdisea> bord@mdd.comm.mot.com (Jean-marc BORD / F1HDI
) writes:
>I am wondering how to measure an output power greater than 1kW on VHF using a
>BIRD 43.
>There is a BIRD slug available but that's a 2.5kW peak one.
>Does anyone know the subtile meaning about this 'peak' notice.

The problem with attempting to measure CW power greater than 1 kW with
a Bird 43 at VHF is that RG-8 sized line isn't rated to carry more power
than that at VHF. To measure higher power, you need a thruline meter with
a more capable thruline section. Dielectric makes thrulines for up to at
least 100,000 watts at VHF, but we're talking 8 inch diameter rigid line
sections now. Still, Bird has made higher power slugs for the 43, I have
an old pair of 10 kW elements. I think they stopped selling them because
too many line sections got fried.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

902. R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 13:23:47 UTC
From: jbate@rtp-nc.mentorg.com
Message-ID: <1994Apr14.132347.26126@news.mentorg.com>
Source record: 118042

I'm trying to find a source for the R2 and T2 pcb as
mentioned in the 1/93 and 4/93 QST articles (by Rick
Campbell).

The source given in the articles seems to have disappeared
and left no forwarding address.

The last known address was:
Applied Radio Science
POB 225
Houghton, MI 49931

Anyone know of a source for these boards?

john, ki7hs

903. Modifying VHF business band radio for ham use

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 14:56:16 UTC
From: crispy@space.mit.edu
Message-ID: <2ojlig$m0k@senator-bedfellow.MIT.EDU>
Source record: 118043

I was wondering if you can put in a send and receive crystal (144 to 148 Mhz) into the business band transceiver and use it as a ham? The business band is 152 to 156 Mhz and it has two channel.

Thanks,

Christopher S. Pak
Massachusetts Institute of Technology
Center for Space Research
37-487
77 Massachusetts Ave.
Cambridge, MA 02139
Phone: (617)253-9342
Fax: (617) 253-0861
E-mail: crispy@space.mit.edu

904. Re: Modifying VHF business band radio for ham use

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 17:11:37 UTC
From: trier@slc6.ins.cwru.edu
Message-ID: <2ojtg9$lbm@usenet.INS.CWRU.Edu>
Source record: 118044

In article <2ojlig$m0k@senator-bedfellow.mit.edu>,
Chris Pak <crispy@space.mit.edu> wrote:
>I was wondering if you can put in a send and receive crystal (144 to 148 Mhz)
>into the business band transceiver and use it as a ham?

It's quite possible. Conversion of commercial and military gear to ham frequencies is common. Moving commercial VHF-high gear to 2 meters is popular.

Whether your particular radio will work effectively on 2m is a good question. It depends on the particular radio. Post the make, model, vintage (if possible) and serial number (if possible) to rec.radio.amateur.equipment and it is fairly likely that someone will be able to tell you if the conversion can be done. If there are any option boards added to the gear, mention them, too. They can be important.

If you decide to try the conversion, the thing you need most is a service manual for the radio. That is usually available from the manufacturer.

It is often get to hire a commercial radio shop to retune the radio into the ham bands, if you don't want to do it yourself.

Stephen

--
Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quoi."
Home: sct@po.cwru.edu - Peter Schickele

905. Re: Modifying VHF business band radio for ham use

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 19:00:44 UTC
From: dbushong@wang.com
Message-ID: <Co9JH9.7HG@wang.com>
Source record: 118045

trier@slc6.ins.cwru.edu (Stephen C. Trier) writes:

>In article <2ojlig$m0k@senator-bedfellow.mit.edu>,
>Chris Pak <crispy@space.mit.edu> wrote:
>>I was wondering if you can put in a send and receive crystal (144 to 148 Mhz)
>>into the business band transceiver and use it as a ham?

>It's quite possible. [...]

>If you decide to try the conversion, the thing you need most is a
>service manual for the radio. That is usually available from the
>manufacturer.

I would say that a properly filled-in FCC form 660 is even more
important. That is an FCC license, which is required to transmit on
the "ham".

Dave, KZ1O
--
Dave Bushong, Wang Laboratories, Inc.

906. Re: Ctr Fed ZEP length?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-14 21:10:56 UTC
From: zardoz@ornews.intel.com
Message-ID: <2okbhh$cpm@ornews.intel.com>
Source record: 118046

In article <RmwOSJm.cecilmoore@delphi.com> Cecil Moore <cecilmoore@delphi.com> writes:
>Pete Hoffswell <pete@wybbs.mi.org> writes:
>
>>What's the best length for a Center Fed Zepp antenna? I'd like it good
>>for all Novice bands, especially 80M and 15M. I have one up now, but I think
>>my length isn't right. It's cut like a 80M dipole now (I think).
>>--
>Pete, the length really doesn't matter as long as your antenna tuner can
>give a conjugate match. 100-105 ft. is popular. My 88 ft. works just fine
>on 75m. It should be at least 3/8 wavelength on the lowest transmit freq.

An extended double Zepp provides the maximum gain at a specific frequency.
This is like a dipole but has a 5/8 wavelength wire on each end of center
instead of 1/4 wavelength. Its two 5/8 wavelength, end-fed antennas in
co-phase in other words. About 28 feet on each side for 15 meters.
It will give good gain with a sharp pattern in the favored direction.
This may be preferable to the split up clover leaf pattern of the 105'
G5RV on 15 meters which is much less predictable but still may be too
selective.
This antenna could be extended a couple more 5/8 wavelengths with 1/4
wavelength shorted stubs of ladder line. It will probably load okay
on all other bands with a tuner similar to G5RV or extended double Zepp.
Maybe put traps or capacitors across the 1/4 wave stubs for lower freq
use?

--
zardoz@ornews.intel.com WA7LDV

907. Varactor diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 03:29:26 UTC
From: mortense@matt.ksu.ksu.edu
Message-ID: <2ol1mm$506@matt.ksu.ksu.edu>
Source record: 118047

Hi:

I'm attempting to make a very broadband synthesizer in the VHF range and I'm looking for some tuning diodes with LARGE tuning ratios. If anyone has any suggestions I'd be very interested.

So far I've gotten 80 MHz to 180MHz with a fairly linear tuning curve. Beyond this the VCO response flattens out. I've got the system running now by misusing hyperabrupt low frequency varactors. These have two problems. Their Q is pretty horrible until you get a fair amount of reverse bias on them. Most are made over a 12V operating range. This gives some pretty massive VCO gains. I'm ideally looking for a high tuning ratio capacitor made for the VHF range. I also wouldn't mind a larger voltage operating range.

Thanks in advance for any advice.

nam

mortense@matt.ksu.ksu.edu

() When all you have is a hammer ...
########======||
... everything looks like a nail!

908. Re: Varactor diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 03:53:39 UTC
From: gcouger@olesun.okstate.edu
Message-ID: <CoA85G.KEF@osuunx.ucc.okstate.edu>
Source record: 118048

In article <2ol1mm$506@matt.ksu.ksu.edu>,
Alvin Nor Mortensen <mortense@matt.ksu.ksu.edu> wrote:
>Hi:
>
>I'm attempting to make a very broadband synthesizer in the VHF range and
>I'm looking for some tuning diodes with LARGE tuning ratios. If anyone
>has any suggestions I'd be very interested.
>
>So far I've gotten 80 MHz to 180MHz with a fairly linear tuning curve.
>Beyond this the VCO response flattens out. I've got the system running
>now by misusing hyperabrupt low frequency varactors. These have two
>problems. Their Q is pretty horrible until you get a fair amount of
>reverse bias on them. Most are made over a 12V operating range. This
>gives some pretty massive VCO gains. I'm ideally looking for a
>high tuning ratio capacitor made for the VHF range. I also wouldn't mind
>a larger voltage operating range.
>
I saw an VCO in RF ??? 1990 sometime that used an electro-magnet to change the
inductance of a coil on a ferrite Coil. It gave a great deal more range than
capicators. Sorry about not rembering the name of the magizine It's a monthly
publication well known and I am pretty sure the editors name is Gary.

Of all the things I've lost I miss my mind the most.
Good luck
Gordon AB5DG
>nam
>
>mortense@matt.ksu.ksu.edu
>
> () When all you have is a hammer ...
> ########======||
> ## ... everything looks like a nail!
>

Gordon Couger
Biosystems & Agricultural Engineering
Oklahoma State University
114 Ag Hall, Stillwater, OK 74074
gcouger@olesun.agen.okstate.edu 405-744-9763 day 624-2855 evenings
I do not speak for my employer

909. Re: Varactor diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 14:05:11 UTC
From: ed@fore.com
Message-ID: <CoB0Go.7nL@fore.com>
Source record: 118049

Hi:

I'm attempting to make a very broadband synthesizer in the VHF range and I'm looking for some tuning diodes with LARGE tuning ratios. If anyone has any suggestions I'd be very interested.

So far I've gotten 80 MHz to 180MHz with a fairly linear tuning curve. Beyond this the VCO response flattens out. I've got the system running now by misusing hyperabrupt low frequency varactors. These have two problems. Their Q is pretty horrible until you get a fair amount of reverse bias on them. Most are made over a 12V operating range. This gives some pretty massive VCO gains. I'm ideally looking for a high tuning ratio capacitor made for the VHF range. I also wouldn't mind a larger voltage operating range.

Thanks in advance for any advice.

nam

Hi nam, I did some vcr tuner tinkering a while ago, varactor diode tuning type, what they do here is use a band switching system, diode switched inductors I think, and then retuned the varactor to give a wider range. If you are using this as a 1 channel at a time synthesizer this could perhaps work for you. If you want a single band sweep for spectrum analyser or spread spectrum than this may not work for you.

My $.02
Ed Bathgate
Ed@fore.com
N3 I.T.M. In The Mail

910. QRP Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 14:12:17 UTC
From: wosborne@nmsu.edu
Message-ID: <40278.wosborne@nmsu.edu>
Source record: 118050

I have been thinking about QRP operation and I was wondering how you demonstrate the 5 watt output for the WAS and other awards to ARRL? What is the most popular watt meter for QRP operation? Is it really any fun?
Thanks for the advice. 73 Bill AA5ZQ

911. Re: - RAMSEY PROBLEMS - HELP -

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 14:24:20 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994Apr15.142420.25411@kocrsv01.delcoelect.com>
Source record: 118051
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <2oi5ca$qq2@romulus.ncsc.mil>, cgarner@romulus.ncsc.mil (Carson B. Garner) writes:
> I have a problem with my Ramsey FX-223 220 Mhz amateur radio.
> The receiver has a pronounced squeal when unsquelched and the
> demodulated audio is extremely distorted. I suspected an IF

I had the same problem with an FX-440 kit. I noticed that the problem was the worst if the board was out of the case and better when it was sitting in the case. I then started poking around on the board and found that pushing down around on the board, I could make it go away. I then bolted it tightly into the case and the problem went away on most frequencies.

I still don't have the transmitter working correctly. People report that they hear the first syllable or two correctly, and then just a dead carrier. A scanner next door receives every word. I've tried two frequency counters, I think it's on frequency. I've tried varying the deviation in small increments from one end of the pot to the other, with the same results. This is about the point where my VHF/UHF skills and equipment give out.

I had fun building the kit, but I don't think I'd get anything this complex from Ramsey again.

--
Jim Buchanan
c22jrb@kopt0017.delcoelect.com (Does the "c22" stand for "catch 22"?)
c22jrb@delphi.com
N9SDV (formerly WD9GHJ)

912. what can cause chirp in homebrew CW transmitter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 14:35:53 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.766420641@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 118052

I recently built a 6L6 CW xmtr of rather standard design, and, while it works OK on 80 meters, it chirps like a bird on 40 and above. The power supply is hefty and well-regulated, so I'm pretty sure that a "soft" supply can't be the problem. Besides, a t about 15 watts, I'm not pushing any performance envelope. The chirp is consistent over tube and xtal changes.

My current guess is that maybe a capacitor is heating, but I haven't started swapping them out yet. Does anyone have another idea?

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

913. 12V pwr adapters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 14:45:16 UTC
From: kenman@iastate.edu
Message-ID: <2om99s$kp@news.iastate.edu>
Source record: 118053

Hi there:

I've got some of the 12 volt "wall wart" power supplies which I need to cut off the molded plugs and replace with a different style plug (output). The wiring to the output plug has a white strip along one side - I assume to show polarity - is this the negative "side"?

Thanks!

Ken

--
Ken Anderson N0ZEM Kenman@iastate.edu PH: 515.294.8996
126 Soil Tilth Bldg., Iowa State University, Ames, Iowa 50011

914. Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 15:00:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <CoB09I.Lyo@newsflash.concordia.ca>
Source record: 118054

Does anyone know where I can find a reliable supply of 1-10 pF piston trimmer caps. I understand that All Electronics used to carry a Johanson part, but I phoned and they no longer stock it.
Message-ID: <15APR199410004441@pavo.concordia.ca>
Organization: Concordia University
News-Software: VAX/VMS VNEWS 1.41

Any help would be appreciated.
-Mark Hillier Internet: MD_HILL@pavo.concordia.ca
Amateur: VE2HVW
PACKET: VE2HVW@VE2FKB
" I hear, I forget. I see, I remember. I do, I understand"

915. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 17:10:10 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-766429788@unomaha.edu>
Source record: 118055
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

```
Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
==========

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

916. Re: Varactor diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 17:23:09 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2omiht$h8u@hpscit.sc.hp.com>
Source record: 118056

In article <2ol1mm$506@matt.ksu.ksu.edu>,
Alvin Nor Mortensen <mortense@matt.ksu.ksu.edu> wrote:
>Hi:
>
>I'm attempting to make a very broadband synthesizer in the VHF range and
>I'm looking for some tuning diodes with LARGE tuning ratios. If anyone
>has any suggestions I'd be very interested.
>
>So far I've gotten 80 MHz to 180MHz with a fairly linear tuning curve.
>Beyond this the VCO response flattens out. I've got the system running
>now by misusing hyperabrupt low frequency varactors. These have two

Actually, 80 to 180 MHz. is fairly respectable; it's over an octave.
When I worked for Zeta Labs, we used to use Motorola MV1401's with
MC1648 VCO IC's to routinely get 50 to 150 MHz. tuning range (with
some design margin). You can also defeat the AGC on the 1648 and
build a 100 to 300 MHz. VCO if you're careful. Since a 3 to 1
frequency range requires a 9 to 1 capacitance range, you won't be
able to do much better than that, because 9 to 1 is getting up near
the state of the art in tuning diodes. At the most you might get
16 to 1, which would give you 4 to 1 tuning range.

We also had a Colpitts oscillator that tuned from 125 to 300 MHz. using
MV209 diodes. The trick here was that both the collector-to-emitter
capacitor and the base-to-emitter capacitor were tuning diodes. That
way the feedback was fairly independent of the tuning frequency.

I tend to agree with other posters that if you're not building a
sweep generator that really needs continuous tuning, it's probably
easier to "wimp out" and use multiple VCO's to cover the range
or put in switched inductors to give a single VCO multiple ranges.
The HP8662 does that, so you would be in good company.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

917. Re: Modifying VHF business band radio for ham use

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 18:20:26 UTC
From: theeric@netcom.com
Message-ID: <theeric-150494111620@198.211.33.53>
Source record: 118057

> I would say that a properly filled-in FCC form 660 is even more
> important. That is an FCC license, which is required to transmit on
> the "ham".

Required by the overly oppressive legal system that is.

But you still want to get a manual as many of the business radios
won't tune that far out of their 'native' band without mods.

Eric Hegstrom KA7CTO theeric@netcom.com

918. Re: what can cause chirp in homebrew CW transmitter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 19:57:15 UTC
From: tgm@netcom.com
Message-ID: <tgmCoBGrF.DBE@netcom.com>
Source record: 118058

Myron A. Calhoun (mac@cis.ksu.edu) wrote:
: My current guess is that maybe a capacitor is heating, but I haven't
: started swapping them out yet. Does anyone have another idea?

Do you key the oscillator? Chirp can sometimes be cured by changing
the design so that the oscillator runs continuously when in transmit
mode and only the driver and/or p.a. are keyed.

Also, if you are using frequency multiplication so that 80 meter
crystals can be used on higher frequency bands, you will find
that this can accentuate chirp. Try using only fundamental
crystals for the band of interest.

Thomas
KI4N

919. Need info on 'Miller #2002 coils... help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-15 23:25:23 UTC
From: pkinnes@csupomona.edu
Message-ID: <1994Apr15.152523.1@clstac>
Source record: 118063

Sorry if this is an FAQ, but I couldn't find a copy (skimmed through),
and it's semi-urgent that I find out soon.....

I need to find a 'Miller No. 2002' coil for a low-power transmitter a
friend (without net access) is building. Any information would be helpful, as
would addresses, or equivalences, etc.

It's not life-or-death urgent, though we are on a bit of a time
schedule, so early replies would be appreciated greatly...

Tnx!

--
Grimm

Patrick K. Innes
Email: pkinnes@vmsa.is.csupomona.edu
"Methinks it is like a weasek"
-The (infinity - 1)st monkey

Note generic disclaimer: These views and/or opinions are mine, not those of
any sentient being or group or organization composed thereof. Thank you.
^
other

920. RS232 help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 03:46:58 UTC
From: bon@paradox.win.net
Message-ID: <115@paradox.win.net>
Source record: 118059

I'm working in a project where I have to communicate a certain machine with a host for calibration purposes. A 3 wire RS-232 interface is used. While I can commnicate from a terminal with the machine, I have tried unsuccessfully to write a C-subroutine for that purpose (further analysis shoul be done in the host).

I have a Borland C++ compiler. I tried the functions bioscom and _bios_serialcom as defined in an example in the real time library. A transition of the RTS line after hiting a key is all what I can see.

I got some subroutines from the book "serial communications programming in C and C++" that I tried up too with no success (Even a simple terminal emulator based controlling the BIOS by passing some parameters to the AH register after request INT14 doesn't work.

Finally I tried using some asm. RS232 drivers that I got (the source I believe never used them) in a similar schema to the INT14.

This is becaming too frustrating!!!. I don't need really a interrupt driven channell (just 2400 or less bauds are fine) . Sending few commands to the machine and receiving some data from several ADC is all the activity of the port.

Does somebody have a couples of proved subroutines that I could use ?. You can E-mail the source code UUencoded to my address if that is the case.
Really appreciate, 73 de JB, KB5UWZ.

--
Joaquin Bonilla Phone: (601)- 4692565
173 Oak Park Dr. Internet:bon@paradox.win.net
Forest, MS 39074, USA Salud !

921. Re: 12V pwr adapters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 04:59:36 UTC
From: n1ist@netcom.com
Message-ID: <n1istCoC5vD.493@netcom.com>
Source record: 118060

In article <2om99s$kp@news.iastate.edu> kenman@iastate.edu (Kenneth D Anderson) writes:
-I've got some of the 12 volt "wall wart" power supplies which I need to cut
-off the molded plugs and replace with a different style plug (output). The
-wiring to the output plug has a white strip along one side - I assume to
-show polarity - is this the negative "side"?

Maybe... Usually it is, but why take chances. Just use your voltmeter (or
an LED with 1K in series) and find out for sure.
/mike

--
\|/ Michael L. Ardai N1IST Teradyne ATB, Boston MA
-*- ---
/|\ ardai@maven.dnet.teradyne.com n1ist@netcom.com

922. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 11:56:04 UTC
From: jimn0oct@aol.com
Message-ID: <2oojok$226@search01.news.aol.com>
Source record: 118061

In article <1994Apr14.132347.26126@news.mentorg.com>, jbate@rtp-nc.mentorg.com (John Bate) writes:

>I'm trying to find a source for the R2 and T2 pcb as
>mentioned in the 1/93 and 4/93 QST articles (by Rick
>Campbell).

>The source given in the articles seems to have disappeared
>and left no forwarding address.

From reading similar threads and hearing the experience of some local hams, you might try calling him. I was just about to make out a check for the R2 board myself (sourced all of the parts already). That is the direction I'm going to pursue.

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

923. Wanted: TNC plans or kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 15:36:26 UTC
From: Rick Gilmore <rg36+@andrew.cmu.edu>
Message-ID: <Yhg0Lui00jW=RVXJB3@andrew.cmu.edu>
Source record: 118062

I have a Macintosh Powerbook 140 I'd like to use for packet. Could someone point me toward plans or a kit for a TNC that would give me basic packet capabilities?

Thanks,

Rick Gilmore
N3QLO

924. peanut-sized tubes info pls.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 18:31:56 UTC
From: sehneg@austin.ibm.com
Message-ID: <CoD7H8.2I70@austin.ibm.com>
Source record: 118064

I have come across some old subminiature tubes. They are 5 wire (yes, no pins actually wires!!) They look to be triode and I suspect they are from the era of the tube-type walkie talkies. They are direct drive filaments (no cathode) and I haven't the faintest on the specs (plate voltage, plate current, fil.etc)

I suspect the filament is about 1.5v and plate maybe 22.5 or 45v. am I close? I don't think there were too many types perhaps someone would be kind enough to email me some info. They would make a fun QRP project. Thanks in advance, GARY. N2KTY

925. Re: 12V pwr adapters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 23:20:14 UTC
From: wrt@eskimo.com
Message-ID: <CoDKtz.4Bu@eskimo.com>
Source record: 118065

In article <2om99s$kp@news.iastate.edu>,
Kenneth D Anderson <kenman@iastate.edu> wrote:
>
>Hi there:
>
>I've got some of the 12 volt "wall wart" power supplies which I need to
cut
>off the molded plugs and replace with a different style plug (output).
The
>wiring to the output plug has a white strip along one side - I assume
to
>show polarity - is this the negative "side"?
>
>Thanks!
>
>Ken
>
>
>
>--
>Ken Anderson N0ZEM Kenman@iastate.edu PH: 515.294.8996
>126 Soil Tilth Bldg., Iowa State University, Ames, Iowa 50011

Sorry, but there is no standard you can trust. Use a simple voltmeter
and measure the polarity. For a given model the stripe will PROBABLY be
consistent, but for other models you're on your own. Welcome to the
world of electronics ;->

Bill, W7LZP

926. Re: what can cause chirp in homebrew CW transmitter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-16 23:50:49 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Apr16.175049.1@ccsvax.sfasu.edu>
Source record: 118066

In article <mac.766420641@depot.cis.ksu.edu.cis.ksu.edu>, mac@cis.ksu.edu (Myron A. Calhoun) writes:
> I recently built a 6L6 CW xmtr of rather standard design, and, while it
> works OK on 80 meters, it chirps like a bird on 40 and above. The power
> supply is hefty and well-regulated, so I'm pretty sure that a "soft"
> supply can't be the problem. Besides, a t about 15 watts, I'm not
> pushing any performance envelope. The chirp is consistent over tube
> and xtal changes.
>
> My current guess is that maybe a capacitor is heating, but I haven't
> started swapping them out yet. Does anyone have another idea?
>
> --Myron.

Don't think it's heating capacitors -- values would have to change very fast to produce chirp, though they'd surely account for slower drift.

I'd carefully monitor the high voltage key-up and key-down. Maybe a regulator is bad, and it _sure_ sounds like a power supply problem.

Cheers & 73,
Jim
K5YUT

927. Re: QRP Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 00:02:25 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Apr16.180225.1@ccsvax.sfasu.edu>
Source record: 118067

In article <40278.wosborne@nmsu.edu>, <wosborne@nmsu.edu> writes:
> I have been thinking about QRP operation and I was wondering how you
> demonstrate the 5 watt output for the WAS and other awards to ARRL? What is
> the most popular watt meter for QRP operation? Is it really any fun?
> Thanks for the advice. 73 Bill AA5ZQ

Various handbooks and other QRP publications have good plans for QRP watt meters. I'm using the MFJ971, which seems to work well, and has the added advantage of the typical MFJ cross-needle meter, providing simultaneous forward power, reverse power, and SWR measurements. A lot of people would probably say that a Byrd watt meter with appropriate, low-power element would be the most accurate.

I find QRP LOTS of fun; it's like recovering your lost youth, when every contact was exciting. I suspect, though, that QRP is most enjoyed by folk who have already done a lot of other kinds of hamming, so that they get that return-to-the-simple-pleasures effect.

I don't chase awards, but believe ARRL and whoever else just takes your word for output power. It's just a hobby, after all; who would you be cheating but yourself?

Cheers & 72 (QRP for 73)
Jim
K5YUT

928. Re: Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 00:08:57 UTC
From: jpll@vectorbd.com
Message-ID: <CoDn2x.3Fu@vectorbd.com>
Source record: 117968

HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
: Does anyone know where I can find a reliable supply of 1-10 pF piston trimmer
: caps. I understand that All Electronics used to carry a Johanson part, but I

Voltronics is another manufacturers as I recall....

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

929. Searching for 450 MHz Power transistor !

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 11:02:51 UTC
From: mattis@elixir.e.kth.se
Message-ID: <2or50r$ekd@news.kth.se>
Source record: 117969

Hi !

I am rebuilding a E.F. Johnson MT-9100 mobile telephone to be used for the 432-438 MHz amateur band. It works quite well except for the power-amplifier which seems to have a broken transistor.

Unfortunately these transistors (actually all in the unit) has E.F. Johanson proprietary numbers on them, and there is no translation table into "normal" numbers.. However, one can conclude who has manufactured them.

Please could anyone help me translate these E.F. Johnson numbers into real numbers:

E.F. Johnson # | Manufacturer | Description in partlist | Used as | Notes

4019 Motorola 1 W UHF transistor Class-A TO39
4069 Thomson 2 W UHF transistor Class-C 1)
4061 Motorola 5 W UHF transistor Class-C 2)
4068 Motorola 15 W UHF transistor Class-C 3) 4)
4027 Motorola 45 W UHF transistor Class-C 3)

Notes:

1) Package type : Surface-opposed-emitter.
2) Package type : Surface-opposed-emitter stud mount.
3) Package type : Sorry I don't know the name, it is mounted to the heatsink with two screws. It has 6 connections, 4 of them emitter and the rest collec and base, Motorola calls it 316-01..
4) In one of the units I convert this one is marked MRF641.

Also, where (in the US or in Europe) can I order smaller quantities of the above transistors ? (One distributor here in Sweden could supply me with anything provided that I ordered at least 25 parts...)

Thanks in advance !

/Mattis

mattis@elixir.e.kth.se

930. Chirp in a CW transmitter ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 18:47:38 UTC
From: wb9mjn@uugate.wa7slg.ampr.ORG
Message-ID: <71827@uugate.wa7slg.ampr.org>
Source record: 117970

----- Forwarded message -----

===== transcript follows =====

While talking to ucsd.edu:
>>> RCPT TO:<homebrew@ucsd.edu>
<<< 550 <homebrew@ucsd.edu>... User unknown
>>> DATA
<<< 503 Need RCPT (recipient)

===== Unsent message follows ====
Date: Sun, 17 Apr 94 12:38:07 mdt
Message-Id: <71824@uugate.wa7slg.ampr.org>
From: wb9mjn@uugate.wa7slg.ampr.org
To: homebrew@ucsd.edu
Subject: Chirp in a CW transmitter...

Hi, I remember an old timer telling me, a long time ago, that single tube
crystal controlled transmitters had problems with the crystal heating. Altho,
a 15 watt oscillator might very well have problems with cap heating, too.

Did i understand u right? Is this the infamous single tube crystal controlled
transmitter, from years and years ago, that u have built?

73, Don wb9mjn%wb9mjn.ampr.org@wb9uus.bradley.edu

----- End of forwarded message -----

931. LTC-1099 A-D Converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 20:30:34 UTC
From: Ding <lk107@delphi.com>
Message-ID: <p27uDOC.lk107@delphi.com>
Source record: 117971

Who makes and where can I obtain an LTC-1099 A-D converter chip. This chip is part of the JVFAX60 decoder. TIA

Ding

932. Re: Wanted: TNC plans or kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-17 23:24:16 UTC
From: jpll@vectorbd.com
Message-ID: <CoFFoI.Bv9@vectorbd.com>
Source record: 117972

Rick Gilmore (rg36+@andrew.cmu.edu) wrote:
: I have a Macintosh Powerbook 140 I'd like to use for packet. Could
: someone point me toward plans or a kit for a TNC that would give me
: basic packet capabilities?

The BAYCOM Modem will hook to a Mac.. the rest of the TNC process
gets done in the Mac itself. There's schemtics, drivers etc on many
LLBBS for this.

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

933. Re: LTC-1099 A-D Converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 01:58:55 UTC
From: bon@paradox.win.net
Message-ID: <124@paradox.win.net>
Source record: 117973

In article <p27uDOC.lk107@delphi.com>, Ding (lk107@delphi.com) writes:
> Who makes and where can I obtain an LTC-1099 A-D converter chip. This
>chip is part of the JVFAX60 decoder. TIA
>
> Ding

The LTC1099 is a High Speed 8-bit A/D converter wih a built in
sample and hold. Linear Technology is the manufacturer.
You can call to Linear Tecnology 408-432-1900 to get a list of
distribuitors.

Best, JB KB5UWZ

--
bon@paradox.win.net (Joaquin Bonilla, Forest, MS, USA)

934. HELP!! Looking for info on Kenwood TR-7625

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 22:15:09 UTC
From: hess@boi.hp.com
Message-ID: <CoH759.5xL@boi.hp.com>
Source record: 117974
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

I purchased a Kenwood TR-7625 at Auction. It is a synthesized 2M rig, and is working. I need a manual for it. Looks like it was built between 1975 and 1980. It has no DTMF, and I would like to have suggestions on a microphone with a DTMF pad and encoder I could put on the radio. The microphone connector is a five pin style. I called Kenwood, they have no manuals and have no suggestions on where to go for help.

To any who have a manual, I will gladly pay costs for photocoping, etc. Thanks much for your time. Maybe I can return the favor to you some day.

--
The statements/opinions expressed here are not necessarily those of the Hewlett-Packard Company. HP paid a research firm millions of dollars to get their own opinions, and has made it clear they do not wish to share mine.

Kevin C. Hess (KB7UKR) Hewlett-Packard Network Printer Division
hess@hpdmd48.boi.hp.com (208) 396-3384 Boise, Idaho 83704

Are we at last brought to such humiliating and debasing degradation, that we cannot be trusted with arms for our defense? ... If our defense be the _real_ object of having those arms, in whose hands can they be trusted with more propriety, or equal safety to us, as in our own hands? - Patrick Henry

935. Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 22:50:14 UTC
From: jbaker@halcyon.com
Message-ID: <jbaker-180494145014@bellevue-ip16.halcyon.com>
Source record: 117975

Does anyone have experience using IEEE 802.3 "thicknet" cable for antenna feeds?

I am thinking about using it for HF longwire antenna leadin from Balun. It is bright yellow, 50 ohm, well sheilded (two foils and 2 braid layers), has one 12 ga. solid center conductor, attaches easily to PL-239's. Plus I have a bunch otherwise going to waste.

Seems like the perfect stuff but I thought I might save myself some grief if my plans are doomed for some reason I don't see.

Thanks for any input.

--
James Baker
Seattle, WA
jbaker@halcyon.com

936. Spec sheets needed for Sony, NPC...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 23:11:09 UTC
From: standimj@cnsvax.uwec.edu
Message-ID: <1994Apr18.171109.14200@cnsvax.uwec.edu>
Source record: 117976

Would anyone know where I could get the adresses for spec sheets from the following?

Sony, Cardinal Components, and NPC?

Im doing some work with digital audio and would greatly appreciate any response, phone numbers for the companies would be great too.

Matt Standing KA9VJV

standimj@cnsvax.uwec.edu

Thanks in advance...

937. Re: Frequency Counter Circuit Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 23:11:55 UTC
From: dank@tekig6.pen.tek.com
Message-ID: <2ov43r$kis@tekadm1.cse.tek.com>
Source record: 117977

In article <1994Apr13.125524.4469@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <".9-Apr-94..6:34:05.PDT".*.D.R._Shalita.ES_AE@Xerox.com>
David_Shalita.ES_AE@xerox.com writes:

>>I would like to homebrew a circuit mod that inhibits freq display
>>any time the input signal is below a minimum amplitude that
>>I would select.

>What you need is a Schmidt trigger circuit near the input stage, at least
>before the counter ICs, if after the prescaler. For a 600 MHz counter, that
>would be a 60 MHz Schmidt.

The best bet is a Schmidt trigger, but it needs to be *before* the pre-scaler (the pre-scaler *is* a counter). Typical ECL flip-flops act transparent when the clock input is balanced, turning the input stage of your pre-scaler into a ring oscillator when the input signal is centered.

A cheap Schmidt can be made using a fast ECL (10KH, ECLiPS, etc) line reciever with a resistive divider from the output to the positive input to provide hysteresis. Two such circuits in a row is somewhat better.

As a "quick and dirty" fix, though, you could just add a little DC offset to the counter or pre-scaler input. (If the counter input is AC coupled, the DC offset needs to be inserted after the AC coupling, so that the pre-scaler IC sees the offset.)

- Dan Knierim
These opinions aren't worth the standard disclaimer form they're printed on!

938. cheap 6-meters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 23:48:56 UTC
From: jgifford@thor.fcs.uga.edu
Message-ID: <JGIFFORD.94Apr18194856@thor.fcs.uga.edu>
Source record: 117978

I recently got my hands on a "Space Patrol" walkie talkie. It is at 49.8 MHz I think. Does anyone know of a cheap and easy way to get the thing into the 6meter band? I figure if it works OK, I can get a little linear that puts out a few (<10) watts and use the local experimental repeaters.

Thanks in advance!
Jim
KD4PPG

939. RF sensing T/R switch

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-18 23:52:00 UTC
From: kbrune@bga.com
Message-ID: <2ov6f0$l3a@giga.bga.com>
Source record: 117979

Anyone out there messed around with an RF sensing T/R switch? I have been thinking of building one for an amp. Thanks in advance ... Ken WL7IR

940. Re: HELP!! Looking for info on Kenwood TR-7625

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 03:31:00 UTC
From: st3qi@jane.uh.edu
Message-ID: <18APR199422314565@jane.uh.edu>
Source record: 117980
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

In article <CoH759.5xL@boi.hp.com>, hess@boi.hp.com (Kevin C. Hess) writes...
>I purchased a Kenwood TR-7625 at Auction. It is a synthesized 2M rig, and
>is working. I need a manual for it. Looks like it was built between 1975
>and 1980. It has no DTMF, and I would like to have suggestions on a
>microphone with a DTMF pad and encoder I could put on the radio. The
>microphone connector is a five pin style. I called Kenwood, they have no
>manuals and have no suggestions on where to go for help.
>
>To any who have a manual, I will gladly pay costs for photocoping, etc.
>Thanks much for your time. Maybe I can return the favor to you some day.
>--
>The statements/opinions expressed here are not necessarily those of the
>Hewlett-Packard Company. HP paid a research firm millions of dollars to
>get their own opinions, and has made it clear they do not wish to share mine.
>
>Kevin C. Hess (KB7UKR) Hewlett-Packard Network Printer Division
>hess@hpdmd48.boi.hp.com (208) 396-3384 Boise, Idaho 83704
>
>Are we at last brought to such humiliating and debasing degradation, that we
>cannot be trusted with arms for our defense? ... If our defense be the
>_real_ object of having those arms, in whose hands can they be trusted with
>more propriety, or equal safety to us, as in our own hands? - Patrick Henry

Try calling East Coast Parts. I have had good luck with them.

1-800-637-0388

73 for now...

-Brad Killebrew N5LJV
-st3qi@jetson.uh.edu
-President, Univ of Houston ARC

941. TI 320C26 DSP Eval Kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 11:02:45 UTC
From: jpll@vectorbd.com
Message-ID: <Col6oM.C1C@vectorbd.com>
Source record: 117981

[Article crossposted from rec.radio.amateur.digital.misc]
[Author was Jim Lill]
[Posted on Sat, 16 Apr 1994 23:56:43 GMT]

Has anybody done anything with TI's $99 320C26 Evaluation Kit?

-Jim wa2zkd

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD
--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

942. Re: Frequency Counter Circuit Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 11:54:41 UTC
From: MDULCEY@pryder.tiac.net
Message-ID: <MDULCEY.2.000BE9B9@pryder.tiac.net>
Source record: 117983

In article <".9-Apr-94..6:34:05.PDT".*.D.R._Shalita.ES_AE@Xerox.com>
David_Shalita.ES_AE@xerox.COM writes:
>From: David_Shalita.ES_AE@xerox.COM
>Subject: Frequency Counter Circuit Mod
>Date: 9 Apr 94 13:34:05 GMT

>Hi,
>I am repairing my old DSI 600 mhz counter (timebase died).

>I am looking for any info about how such a circuit is implemented
>in modern freq counters, what family of circuits are used to be
>usable at 600 mhz.
>
>Suspect some of the 100 series ECL IC's from Motorola, Philips
>or Sony may be usable at 600 mhz. Need suggestions where to get
>these at low cost in small quantities...just enough for this
>project.
>
>Thanks, Dave
>w6mik

A tough one!

Most frequency counters these days use proprietary chips. You can't get them easily; they're made just for the counter manufacturers.

There are some prescaler chips you can still get. Unfortunately, they're designed for division ratios like 64 or 256, which won't mesh well with your existing counter design. The 11C90, which was the popular /10 prescaler that was used in most of the 600MHz designs of the late 1970's through the 1980s, isn't made any more.

The counter article in the current edition of The Radio Amateur's Handbook goes into this, in the process of explaining why they're only offering a 60MHz counter design these days.

943. Re: Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 13:10:58 UTC
From: landisj@drager.com
Message-ID: <1994Apr19.091058.47@drager.com>
Source record: 117982

In article <CoDn2x.3Fu@vectorbd.com>, jpll@vectorbd.com (Jim Lill) writes:
> HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
> : Does anyone know where I can find a reliable supply of 1-10 pF piston trimmer
> : caps. I understand that All Electronics used to carry a Johanson part, but I
>
>
> Voltronics is another manufacturers as I recall....
>

Also check out Hamtronics (716-392-9430) They have a free catalog.
They sell a bag of 'em for abt $5.

--
Joe Landis - System & Network Mgr. - North American Drager Co.
landisj@drager.com | uupsi5!main03!landisj | AA3GN @ WB3JOE

944. Re: peanut-sized tubes info pls.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 15:19:15 UTC
From: pgarabed@cms.cc.wayne.edu
Message-ID: <pgarabed.15.000F5297@cms.cc.wayne.edu>
Source record: 117986

In article <CoD7H8.2I70@austin.ibm.com> sehneg@austin.ibm.com (Sehne) writes:
>From: sehneg@austin.ibm.com (Sehne)
>Subject: peanut-sized tubes info pls.
>Date: Sat, 16 Apr 1994 18:31:56 GMT
>Keywords: tubes homebrew

>I have come across some old subminiature tubes. They are 5 wire (yes, no pins
>actually wires!!) They look to be triode and I suspect they are from the era
>of the tube-type walkie talkies. They are direct drive filaments (no cathode)
>and I haven't the faintest on the specs (plate voltage, plate current, fil.etc)

>I suspect the filament is about 1.5v and plate maybe 22.5 or 45v. am I close?
>I don't think there were too many types perhaps someone would be kind enough
>to email me some info. They would make a fun QRP project. Thanks in advance,
>GARY. N2KTY

If I remember right.Alot of that minature tube stuff was used in the military
communications gear.Good stuff...Don't know where you might find specs.

945. Re: RF sensing T/R switch

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 20:05:42 UTC
From: zlau@arrl.org
Message-ID: <1994Apr19.200542.10860@arrl.org>
Source record: 117984

Ken Brune (kbrune@bga.com) wrote:
: Anyone out there messed around with an RF sensing T/R switch? I have been
: thinking of building one for an amp. Thanks in advance ... Ken WL7IR

Yes, a simple diode detector will do fine for detecting RF
and triggering a sequencer. However, I prefer to put a
current limited DC voltage on the coax instead. This is
even easier to detect.

This works a lot better on SSB/CW, because it isn't
necessary to incorporate a timing delay to keep the
amplifier in transmit during short pauses. The delay
is often too short when you are talking and too long
when you want to listen.

I use a sequencer to assure the antenna is hooked up
before the amplifier is ready to put out power.
Some amplifiers don't like to see an open circuit.
I think relays last longer if you don't switch
them while many watts of RF is applied.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

946. dtmf decoder chips- who makes a good one?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 21:02:41 UTC
From: ed@fore.com
Message-ID: <ColyGI.3Fy@fore.com>
Source record: 117985

I am wanting to build a circuit that decodes & responds to dtmf tones. I plan on using a microcontroller with parallel io.

Any recommended chips/ circuits / articles?

Ed Bathgate

N3I.T.M In The Mail

947. How to build a FH xmitter/rcvr pair?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-19 22:26:14 UTC
From: hull@how.csl.uiuc.edu
Message-ID: <2p1lq6INNmof@roundup.crhc.uiuc.edu>
Source record: 117987

I am interested in building a low power, low frequency
Frequency Hopped transmitter/receiver pair for experimentation.
Is there a good source of information on constructing such a
device?

Any and all help is appreciated.

Thanks!

Andy Hull
Univ. Illinois
hull@what.csl.uiuc.edu
(217) 333 6444

948. Re: Ramsey kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 03:36:05 UTC
From: jramsey@delphi.com
Message-ID: <JU2szIt.jramsey@delphi.com>
Source record: 117988

Did you call the factory? Pretty hard to not be able to get a 1GHz osc to work - especially on the MD-3. How about calling me directly at the factory. I'll be glad to help you. Be sure to have the unit in front of you when you call. Best time to reach me i
s after 4 PM. And, yes I do return phone calls!

73 John

949. Re: - RAMSEY PROBLEMS - HELP -

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 03:43:21 UTC
From: jramsey@delphi.com
Message-ID: <BU3sjmp.jramsey@delphi.com>
Source record: 117989

Do you folks know about our warranty? Its printed in the back of our manuals - you have nothing to lose by sending the unit backto us for repair. There is no charge for the repair if the kit has been assembled correctly. Go ahead, try us we won't bite. Wha
t can we do to help??? Besides sitting next to you when troubleshooting - plane fares are still a little too high! 73, John.

PS I'm always available via phone, I welcome all phone calls. I'm rarely on this tube.

950. Re: what can cause chirp in homebrew CW transmitter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 15:47:58 UTC
From: cmoore@ilx018.intel.com
Message-ID: <2p3ire$1rd@chnews.intel.com>
Source record: 117990

Myron A. Calhoun (mac@cis.ksu.edu) wrote:
: I recently built a 6L6 CW xmtr of rather standard design, and, while it
: works OK on 80 meters, it chirps like a bird on 40 and above. The power

Myron, give us a few more details. Do you key the oscillator? How? All oscillators chirp when keyed from non-oscillation into oscillation... it's just that some come up to steady state so fast a human ear can't hear the chirp and some are slow enough to hear. Cathode keying is not the way to go. Grid block keying works well especially if you allow a very low level of oscillation when the key is up and a high level of oscillation when the key is down. That gives the oscillator a head start.

73, Cecil, KG7BK

951. Re: dtmf decoder chips- who makes a good one?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 16:36:48 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Apr20.163648.12817@vlsi.polymtl.ca>
Source record: 117991

In article <CoIyGI.3Fy@fore.com> ed@fore.com (Ed Bathgate) writes:
>I am wanting to build a circuit that decodes & responds to dtmf
>tones. I plan on using a microcontroller with parallel io.
>
Use a Mitel 8870. It is the standard of the telephone industry. It
provides a 4 bit parallel out with a strobe that is perfect for what
you want to do. It decodes all 16 DTMF tone pairs and costs about
$10 bucks. Good Luck, Nick

952. Re: Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 16:48:09 UTC
From: sehneg@austin.ibm.com
Message-ID: <CoKHC9.uIE@austin.ibm.com>
Source record: 117992

I know MC Howard Electronics here in Austin has some. They are a surplus place, so I don't know what you require when you say reliable. I suspect once the stock is gone, it's gone. Sorry I don't have their number handy but they should be reachable by directory assistance. They also have compression/mica trimmers. Regards, Gary N2KTY

953. Re: POWER TRANSFORMER HELP NEEDED!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 16:57:22 UTC
From: pgarabed@cms.cc.wayne.edu
Message-ID: <pgarabed.16.0010F545@cms.cc.wayne.edu>
Source record: 117996

In article <1994Apr14.025531.17157@wmichgw> x90galbrait1@wmich.edu writes:
>From: x90galbrait1@wmich.edu
>Subject: POWER TRANSFORMER HELP NEEDED!!!
>Date: 14 Apr 94 02:55:30 EST

>Hello!

>I just picked up an old (early 70s) Bell & Howell tube-type scope.
>It was cheap, but the power transformer is SHOT (it snap, crackles, and pops).
>There is no manufacturer printed on it, but there is a model #.
>I do not know what the secondaries are wound for, except there are twelve leads
>coming out of the transformer (2 being the 117vac in).

>Is there somewhere I can get a replacement?
>Is there someone who will rewind it?

>Any help would be returned by countless blessings!

This could be a big job.I've rewound transformers on occasion even a

high voltage type for a tube scope type.Is this a tube type scope?
Do you have a circuit diagram? You're gonna need it
>
73, Chris, KA8WFC

954. mail list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 20:39:45 UTC
From: CS-ERH@nich-nsunet.NIch.EDU
Message-ID: <MAILQUEUE-101.940420143945.352@nich-nsunet.nich.edu>
Source record: 117993

```
subscribe mail list Evert Halbach
```

955. Ramsey responsive (was Re: Ramsey kits)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 22:15:25 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2p49ht$isa@abyss.West.Sun.COM>
Source record: 117994

I had the pleasure of chatting with John Ramsey last week at the
International Wireless Communications Expo. Though I have been
critical of the FX series radios, I wanted to post a Usenet
note mentioning that I admire John's energy, enthusiasm, and
responsiveness to customer desires. I must say, John has a straight-on
personal style, and that is refreshing.

Now, I'll call him and see if I can't talk him to selling a 900MHz
data radio kit....

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

956. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-20 22:55:26 UTC
From: kludge@netcom.com
Message-ID: <kludgeCoKyCE.EpH@netcom.com>
Source record: 117995

In article <jbaker-180494145014@bellevue-ip16.halcyon.com> jbaker@halcyon.com (James Baker) writes:
>Does anyone have experience using IEEE 802.3 "thicknet" cable for antenna
>feeds?
>
>I am thinking about using it for HF longwire antenna leadin from Balun. It
>is bright yellow, 50 ohm, well sheilded (two foils and 2 braid layers), has
>one 12 ga. solid center conductor, attaches easily to PL-239's. Plus I have
>a bunch otherwise going to waste.

Works great. Extremely low loss, very rugged and handles being left
outside better than most conventional cables. Be careful using old
Ethernet lines, though, if they've got vampire tap holes left on them.
At the very least, seal them up with RTV. Water will get into them and
you will find interesting line problems.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

957. Re: Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 01:40:03 UTC
From: lreiss@liberty.uc.wlu.edu
Message-ID: <1994Apr21.014003.19282@liberty.uc.wlu.edu>
Source record: 117997

HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
: Does anyone know where I can find a reliable supply of 1-10 pF piston trimmer
: caps. I understand that All Electronics used to carry a Johanson part, but I
: phoned and they no longer stock it.
: Message-ID: <15APR199410004441@pavo.concordia.ca>
: Organization: Concordia University
: News-Software: VAX/VMS VNEWS 1.41

: Any help would be appreciated.
: -Mark Hillier Internet: MD_HILL@pavo.concordia.ca
: Amateur: VE2HVW
: PACKET: VE2HVW@VE2FKB
: " I hear, I forget. I see, I remember. I do, I understand"

Mark
I just received a catalog from SURPLUS SALES OF NEBRASKA, 1502 Jones
St., Omaha, NE 68102. Tele 402-346-4750. They have some glass piston
trimmers at $1.00. If you are working at 70cm or so they have the
Johannson type at $5.00 (sure beats Newark Elec's price).
Another possible source is DOWN EAST MICROWAVE, RR 1, Troy ME, 04987.
Ph 207-948-3741.
Look in the back of QST for Michigan Microwave (or a similar name-I
can't remember). They have all sorts of goodies for VHF through Microwave.

73
Len

****

Leonard J. Reiss Washington & Lee University
KF4JT Tech Services
___|___
o-------O(_)O-------o

****

958. POLICE BBS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 08:51:30 UTC
From: kevincur@netcom.com
Message-ID: <kevincurCoLpxu.G61@netcom.com>
Source record: 117998
Cross-posted to: uk.radio.amateur,alt.law-enforcement,alt.prisons,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.amateur.misc,rec.radio.cb,rec.radio.shortwave,alt.radio.scanner,misc.emerg-services

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: :
: Large selection of file areas...Crime Prevention Information, :
: Ham Radio, Law Enforcement and General Software. Many Door :
: areas are available-Try them--they are entertaining & Fun!! :
: C.O.P.S BBS is available 24 hours a day, 7-days a week. :
: 8-N-1 supports up to 14.4 baud rate. :
: Thousands of CD-ROM files on-line!!! :
: :
: Check It Out TODAY! ! ! :
: :
: C.O.P.S. B B S :
: San Jose, CA :
: U.S.A :
: (408) 996-7790 :
: Tell them Kevin sent you!! :
:MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM:
--
-------------------------------------------------------------------------------
Kevin Curry
P.O. Box 7083 The night prowler strikes again!
Fremont, CA 94537-7083
E-Mail - kevincur@netcom.com
Never insult seven men, when all you're packin' is a six gun - Zane Gray
-------------------------------------------------------------------------------
```

959. Re: Source for Piston Trimmer Caps ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 13:09:39 UTC
From: dave@diusys.cms.udel.edu
Message-ID: <2p5tuj$q4d@news.udel.edu>
Source record: 117999

HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
: Does anyone know where I can find a reliable supply of 1-10 pF piston trimmer
: caps. I understand that All Electronics used to carry a Johanson part, but I
: phoned and they no longer stock it.
:
Microwave Components of Michigan has Johanson and Trimtronix
(313) 753-4581

73, Dave WA3U

960. Comments on the new OHR "Classic" 20/40 meter QRP transceiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 14:21:24 UTC
From: rossi@VFL.Paramax.COM
Message-ID: <1994Apr21.142124.18844@VFL.Paramax.COM>
Source record: 118000

Just got the latest OHR catalog and it shows their new 20 *and* 40 meter
dual-band QRP transceiver. I talked to them on the phone and they claim
it has similar performance to the "Sprit" transceiver but is dual-band.
Looks pretty nice. Anyone out there build one yet? Comments?

==
Pete Rossi - WA3NNA rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania
==

961. Comments on the new OHR "Classic" 20/40 meter QRP transceiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 14:24:43 UTC
From: rossi@VFL.Paramax.COM
Message-ID: <1994Apr21.142443.18991@VFL.Paramax.COM>
Source record: 118001
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Just got the latest OHR catalog and it shows their new 20 *and* 40 meter
dual-band QRP transceiver. I talked to them on the phone and they claim
it has similar performance to their "Sprit" transceiver but is dual-band.

Looks pretty nice. Anyone out there build one yet? Comments?

==
Pete Rossi - WA3NNA rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania
==

962. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 16:23:07 UTC
From: barryc@mpd.tandem.com
Message-ID: <1994Apr21.162307.13974@integrity.uucp>
Source record: 118002

RE:

>I am thinking about using it for HF longwire antenna leadin from Balun. It
>is bright yellow, 50 ohm, well sheilded (two foils and 2 braid layers), has
>one 12 ga. solid center conductor, attaches easily to PL-239's. Plus I have
>a bunch otherwise going to waste.

The TARGA (Tandem Amateur Radio Group of Austin) hamshack is located
about ~150 feet (via cable tray) from where our roof mounted antennas
are mounted. The local building code requires plemtum rated cable.
We used plentum rated ethernet cable (free) to connect both our HF and
VHF rigs. I`m sure the loss is high on 440 but on 2 and HF we seem to do reasonably well
with it. Surely no reason to throw it away.

Our Company president (a well known 6 meter and EME ham) when visiting last month suggested
that we punch a hole thru the wall and avoid the long cable runs. I guess if he said its
ok...Anyone know a good way to punch a 3" hole through 18" of concrete, rock and steel?

CUL,
-barryc

--
Barry D. Chalcroft / N5NWI Tandem Computers ISD, Austin,TX
Work: (512) 244-8723 The Home of "UNIX with Integrity""
EMAIL: barryc@mpd.tandem.com bchalcroft@delphi.com
76500.2177@compuserve.com barryc@cactus.org

963. RE: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 16:41:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2DB6AEFB@msmail.uthscsa.edu>
Source record: 118003

On 18 Apr James Wrote:

>Does anyone have experience using IEEE 802.3 "thicknet" cable for antenna
>feeds?

>I am thinking about using it for HF longwire antenna leadin from Balun. It
>is bright yellow, 50 ohm, well shielded (two foils and 2 braid layers), has
>one 12 ga. solid center conductor, attaches easily to PL-239's. Plus I have
>a bunch otherwise going to waste.
>
>Seems like the perfect stuff but I thought I might save myself some grief
>if my plans are doomed for some reason I don't see.
>
>Thanks for any input.
>
>
>--
>James Baker
>Seattle, WA
>jbaker@halcyon.com

James,
I would not recommend using EtherNet cable for use on a transmitter. Sure
it is
very good cable with low loss. However, if you will notice, probably
stamped
on the side of the cable is "50 Volts MAX" or something like that. If you
have
any of the "standard" rigs on the market that will put out 100 or so watts
you
will quickly burn through the cable insulation. If the impedance of the
cable
is 50 ohms then by Ohm's law you would be limited to about 50 watts.
P=EI, I=E/R so P=(E*E)/R so if you are limited to 50 volts then:

P=(50*50)/50 so you would be limited to 50 watts.

Kevin (WB5RUE)
muenzlerk@uthscsa.edu
The University of Texas Health Science Center at San Antonio

964. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 17:00:15 UTC
From: tomb@lsid.hp.com
Message-ID: <CoMCKF.Aus@hpcvsnz.cv.hp.com>
Source record: 118004

Muenzler, Kevin (MUENZLERK@uthscsa.EDU) wrote:

: very good cable with low loss. However, if you will notice, probably
: stamped on the side of the cable is "50 Volts MAX" or something like
: that. If you have any of the "standard" rigs on the market that will
: put out 100 or so watts you will quickly burn through the cable
: insulation. If the impedance of the

My impression is that the Thick-LAN cables that have this stamped on them have it as a safety/regulatory thing for use in the intended application, and that it has nothing to do with the actual ability of the cable to handle voltage. We often rate inputs to instruments at 40 volts maximum, not because that's the most they can stand but because to rate them higher would require jumping through all sorts of hoops, and higher voltage is really unnecessary in the application.

Does anyone out there have evidence to the contrary? Has anyone actually zapped some of it by running a few hundred watts at HF at reasonable SWR? (I _know_ there are folk out there using this stuff for transmitting...)

BTW, I have some which is not marked that way, and the catalog listing for it similarly is silent on voltage rating. In what way is the insulation _so_ different from that in rg8-type foam insulated cables, which may be rated for well over 1000 volts?

73, K7ITM

965. Direction Finder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 18:13:06 UTC
From: toyo@bu.edu
Message-ID: <2p6fni$4rl@news.bu.edu>
Source record: 118005

Dose anybody has experience of making the Doppler direction finder??
Which has 4 or 8 fixed vertical antennas, and gives bearing of 360 degrees
in digital with 1 degree precision??

I am thinking to make one for my experiment. Although it is quite popular
in communication field, such as FAA(for air crafts) or police(Lo-Jack), I
could not locate any article or source of a Doppler Radio Direction Finder.

If you know something about this, please let me know!! Is any article
available on a certain magazine, electric book(?) on internet or diagrams of
it??

Your advise, comment, and anything related to a Doppler Directional Finder
will be greatly greatly greatly appreciated!!
Again, thank you very much in advance!!

toyo@bu.edu
in Boston

966. Re: Comments on the new OHR "Classic" 20/40 meter QRP transceiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 19:50:17 UTC
From: adams@chuck.dallas.sgi.com
Message-ID: <CoMKFu.FB4@odin.corp.sgi.com>
Source record: 118006
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <1994Apr21.142443.18991@VFL.Paramax.COM>, rossi@VFL.Paramax.COM (Pete Rossi) writes:
|> Just got the latest OHR catalog and it shows their new 20 *and* 40 meter
|> dual-band QRP transceiver. I talked to them on the phone and they claim
|> it has similar performance to their "Sprit" transceiver but is dual-band.
|>
|> Looks pretty nice. Anyone out there build one yet? Comments?
|>
|> ==
|> Pete Rossi - WA3NNA rossi@vfl.paramax.COM
|>
|> Unisys Corporation - Government Systems Group
|> Valley Forge Engineering Center - Paoli, Pennsylvania
|> ==
|>

I am in the process of building one this week. Should have it done
by monday and will take it to Dayton for display at the QRP ARCI
Hospitality suite along with a couple of other rigs that I've put
together. It is super quality both in parts and assembly manual.
I think as good as Heathkit was, but that's just my opinion and I
have invested considerable money and time in Heath since 1958. :-)

dit dit
--
Chuck Adams K5FO CP-60
adams@sgi.com

967. Re: RS232 help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 21:52:25 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-210494175225@k4dii.ksc.nasa.gov>
Source record: 118007

In article <115@paradox.win.net>, bon@paradox.win.net (Joaquin Bonilla)
wrote:
> I'm working in a project where I have to communicate a certain
> machine with a host for calibration purposes. A 3 wire RS-232
> interface is used. While I can commnicate from a terminal with the
> machine, I have tried unsuccessfully to write a C-subroutine for
> that purpose (further analysis shoul be done in the host).

JB-

It sounds as if your computer was using a "hardware handshaking" routine.
You may only need to disable the handshake requirements at the computer end
of the link. I assume the three wires are send, receive and signal ground.
It might be as simple as connecting RTS to CTS.

73, Fred, K4DII

968. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-21 23:07:31 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Apr21.230731.20501@ke4zv.atl.ga.us>
Source record: 118008

In article <2DB6AEFB@msmail.uthscsa.edu> MUENZLERK@uthscsa.EDU (Muenzler, Kevin) writes:
>On 18 Apr James Wrote:
>>Does anyone have experience using IEEE 802.3 "thicknet" cable for antenna
>>feeds?
>
>James,
>I would not recommend using EtherNet cable for use on a transmitter.
>Sure it is very good cable with low loss. However, if you will notice,
>probably stamped on the side of the cable is "50 Volts MAX" or something
>like that. If you have any of the "standard" rigs on the market that will
>put out 100 or so watts you will quickly burn through the cable insulation.

There is no reason to panic. That labelling is on the cable so that it
does not have to be run in conduit in commercial installations. The NEC
allows low voltage wiring to be run outside of conduit, so they mark the
cable with a low voltage warning to make the electrical inspectors happy.
In fact, the voltage breakdown is about 8,000 volts, just like RG-8, assuming
there are no vampire tap holes in the cable of course. If the cable is
used, and full of tap holes, all bets are off.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

969. Re: Output power measurement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 02:27:03 UTC
From: joekd4uow@aol.com
Message-ID: <2p7cln$92u@search01.news.aol.com>
Source record: 118009

About measuring more than 1kw at vhf with amodel 43, One simple solution is to build a directional coupler with the coupled value at about 40 dB. this method would require two dummy loads, one that would handle about 2.5-3 kw for saftey sake, and one that would handle 50 watts cw. Accuracy would not be great, but if you haven't had your 43 cal'd in the last six months to a laboratory standard, it's worse than about 10% anyway. Reverse the coupler to measure reflected power.

Hope this helps,
Joe Freeman
KD4UOW

970. Re: Direction Finder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 02:27:33 UTC
From: walker@opus.hpl.hp.com
Message-ID: <40010006@opus.hpl.hp.com>
Source record: 118010

In rec.radio.amateur.homebrew, toyo@bu.edu (Toyo Cheng) writes:

> If you know something about this, please let me know!! Is any article
> available on a certain magazine, electric book(?) on internet or diagrams of
> it??

Look for an article on the "Dopplescant" system in an old QST circa
~1976. I believe that one of the ARRL handbooks had a section on it
also.

--
Rick Walker

971. Re: Fixing HV supply on 'scope

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 02:33:06 UTC
From: joekd4uow@aol.com
Message-ID: <2p7d12$95d@search01.news.aol.com>
Source record: 118011

I'm not familar with your scope, bu thte majority of the time, the HV transformer only puts out about 300VAC. A voltage multipler/rectifer circuit does the rest. Usually, the primary of the transformer is fed with either line voltage, or for better filtering of line noise in the Z-axis, 12-25Vdc oscillated into a square or sine wave.
You May try taking an RMS voltmeter to the primary side of the xfmr to see where you need to start from.

If you need more help, E-Mail me at JoeKd4uow@AOL.COM

Joe Freeman
Kd4UOW

972. Re: TI 320C26 DSP Eval Kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 04:35:32 UTC
From: jeffj@cbnewsm.cb.att.com
Message-ID: <Con8rA.5E9@cbnewsm.cb.att.com>
Source record: 117925

In article <CoI6oM.C1C@vectorbd.com> jpll@vectorbd.com (Jim Lill) writes:
>[Article crossposted from rec.radio.amateur.digital.misc]
>[Author was Jim Lill]
>[Posted on Sat, 16 Apr 1994 23:56:43 GMT]
>
>Has anybody done anything with TI's $99 320C26 Evaluation Kit?
>
>-Jim wa2zkd

No but I would love to, could you tell us more about it?

Jeff

--
Jeff Jones AB6MB | Vote out those who voted for the North American
jeffj@seeker.mystic.com | Free Trade Agreement!
Infolinc BBS 510-778-5929 |

973. Re: TI 320C26 DSP Eval Kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 05:21:08 UTC
From: mfraser@vanbc.wimsey.com
Message-ID: <2p7ms4$iba@vanbc.wimsey.com>
Source record: 117943

I bought the TI C26 DSK last fall. I suggest you look at ftp orst.edu
(don't remember the exact address) or email forrerj@FRL.orst.edu for
his (johann Forrer) port of the W9GR DSP noise reducer/notch to this
unit. Look also for some other dsp modems; some of them with
a [well justified] price attached.

Does it meet my expectations?

Yah. Comes with RCA phono jacks in and out; 16-bit I think a/d and d/a
conv, sample up to 30 or 50 khz; lotsa demo software at ti.com
via ftp or a couple of other sites (one in Australia).

Bought a book - PC-DSP. Best 30 bucks I've spent in a while - it's
been superceded I think, probably even better - disks with programs
etc to design FIR, IIR and other goodies. Makes coefficients that
can be loaded into the DSK via it's D9 RS232 port. [I forgot to
mention that, didn't I...]

Then again, I'm just a learner. Check Arrow, other TI distribs. They
were short of stock a few months back. Great bargain.

There's a rumored C51 versio, but it keeps getting delayed.

Cheers / Mark

974. Re: Ramsey responsive (was Re: Ramsey kits)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 05:45:32 UTC
From: kg7bk@indirect.com
Message-ID: <2p7o9s$bal@herald.indirect.com>
Source record: 118012

Dana Myers (myers@spot.West.Sun.COM) wrote:

: I had the pleasure of chatting with John Ramsey last week at the
: International Wireless Communications Expo. Though I have been
: critical of the FX series radios, I wanted to post a Usenet
: note mentioning that I admire John's energy, enthusiasm, and
: responsiveness to customer desires. I must say, John has a straight-on
: personal style, and that is refreshing.
: * Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *

Hi Dana... good for you. We all have our good and bad sides (except me of course) and I got a lot of email to my personal account agreeing that John Ramsey had been treated unfairly and that personal attacks have no place on Internet. We are all in this together and anything that anyone of us can do to help and improve a fellow American company will go far to make up what was done to Hallicrafters, National, Collins, Harvey-Wells, Knight, Heath, Globe, etc. Wouldn't if be great if American hams started building from kits all their mobile and QRP rigs? I doubt if any American company can compete in the HT business but where size doesn't matter, why not buy American kits... it'll help the balance of trade...

73, KG7BK, CecilMoore@delphi.com

975. 811A Tube availability?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 05:54:31 UTC
From: tjenkins@pnet16.navy.mil
Message-ID: <ConCEv.E32@nctams1.uucp>
Source record: 118013

Anyone have an idea as to where to obtain such tubes?

I've one that is glowing redder than the others :)

--Tom

INET: tjenkins@pnet16.navy.mil

976. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 06:10:44 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseConD5x.860@netcom.com>
Source record: 118014

In article <2DB6AEFB@msmail.uthscsa.edu> MUENZLERK@uthscsa.EDU (Muenzler, Kevin) writes:
>James,
>I would not recommend using EtherNet cable for use on a transmitter. Sure it is
>very good cable with low loss. However, if you will notice, probably stamped
>on the side of the cable is "50 Volts MAX" or something like that.

Reason for the "50V max" has more to do with National Electrical Code rules
than what the cable would be able to take. Apparently, the NEC rules are
looser with voltages below 50V, being used for "signal" purposes and not
for power deliverly. So, the manufacturer just marks it "50V max" to
avoid the extra grief of getting approval to handle higher voltages.
Ethernet is intended to be strung thru building ceilings and walls, and
would fall under NEC rules for safety and such.

Ethernet cable should be able to handle anything that foam RG8U can, or
pretty close.

977. Re: Comments on the new OHR "Classic" 20/40 meter QRP transceiv

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 11:42:03 UTC
From: jimn0oct@aol.com
Message-ID: <2p8d6b$fqc@search01.news.aol.com>
Source record: 118015

is the receiver for this new rig copied from any of the well known published DC circuits, or is it a Superhet?

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

978. Trimmer Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 13:59:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <Conw4F.7Hx@newsflash.concordia.ca>
Source record: 117921

I would like to thank all those who supplied info on a source for trimmer caps.
I now realize that I should have been slightly more specific in my request. I
was looking for a chassis mount type of hi-Q trimmer (a Johanson 5400 type to
be specific). The cap is to be used in the helical filter design in the
"Transitter Hunting: Radio direction finding simplified" book by K0oOV and
WB6UZZ.
Message-ID: <22APR199408595206@pavo.concordia.ca>
Organization: Concordia University
News-Software: VAX/VMS VNEWS 1.41

I have since found that Electrosonic carries them....at $20 EACH (Yeowch!).
At this point, I am looking at Johnson air variables as a possible substitute.
Even they are about $10 each.

-Mark Hillier Internet: MD_HILL@pavo.concordia.ca
Amateur: VE2HVW
PACKET: VE2HVW@VE2FKB
" I hear, I forget. I see, I remember. I do, I understand"

979. Re: Direction Finder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 14:07:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <22APR199409073407@pavo.concordia.ca>
Source record: 117920

In article <2p6fni$4rl@news.bu.edu>, toyo@bu.edu (Toyo Cheng) writes...
>Dose anybody has experience of making the Doppler direction finder??
>Which has 4 or 8 fixed vertical antennas, and gives bearing of 360 degrees
>in digital with 1 degree precision??
>
>I am thinking to make one for my experiment. Although it is quite popular
>in communication field, such as FAA(for air crafts) or police(Lo-Jack), I
>could not locate any article or source of a Doppler Radio Direction Finder.
>
>If you know something about this, please let me know!! Is any article
>available on a certain magazine, electric book(?) on internet or diagrams of
>it??

The book "Transmitter Hunting: Radio Direction Finding Simplified" By Joe Moell K0OV and Tom Curlee, WB6UZZ (TAB books ISBN 0-8306-2701-4) has a large section on this topic. They talk extensivly about the Roanoake Doppler which is supposed to be pretty good for the money. A second source is of course the ARRL handbook (No ham should be without one).

Good Luck

-Mark Hillier Internet: MD_HILL@pavo.concordia.ca
Amateur: VE2HVW
PACKET: VE2HVW@VE2FKB
" I hear, I forget. I see, I remember. I do, I understand"

980. Re: Direction Finder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 15:46:21 UTC
From: tomb@lsid.hp.com
Message-ID: <Coo3tA.30v@hpcvsnz.cv.hp.com>
Source record: 117922

Rick Walker (walker@opus.hpl.hp.com) wrote:

: Look for an article on the "Dopplescant" system in an old QST circa
: ~1976. I believe that one of the ARRL handbooks had a section on it

May, 1978, QST. I have one, with an additional antenna for 440. Works
OK, but not to 1 degree precision; the signals are _never_ that good
anyway. I can provide copies of the article for a SASE plus an extra
29 cent stamp; email me if interested.

73, K7ITM -- Tom

981. Re: What can cause chirp in homebrew CW transmitter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 16:14:52 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <72768@uugate.wa7slg.ampr.org>
Source record: 117924

The cause of chirp in an xtal-controlled transmitter (or any crystal or most any oscillator, for that matter) can be traced to just a few things. 1) Component heating 2) Poor Voltage regulation 3) Poor load isolation 4) Temperature coefficients of other components.

I would guess that in the case of the 6L6 transmitter it is likely a combintation of the first two. Too much crystal drive will heat the quartz element and cause a chirp. Slight adjustment of some of the tuned elements or feedback components around the xtal may help. I would guess that the 6L6 transmitter used an ECO (an electron-coupled oscillator - Too bad there isn't a solid-state equivalent:-( ) so that isn't likely to be a problem if the design is reasonable. So, the next most likely thing is poor regulation of plate and bias supplies. See if the power supply "droop" "follows" the chirp. You may also want to check the "stiffness" of some of the bias supplies. Overdrive could not only result in crystal heating, but in overdrive of the tube and making a bias supply being dragged around from changes in grid current.

I'll bet your power supply is wandering around...

As far as load isolation, there's not much that can be done about that with a single-tube-element transmitter. Also, that sort of problem generally doesn't cause "chirp" per se, but rather your frequency would vary slightly with tuning, antenna swinging, etc. The component temperature coefficient problem (not to be confused with component heating) is also a long-term stability problem. That is, over the course of a 10's of seconds or longer the frequency would move around...

As far as power supply regulation, you may consider the normal tricks to improve dynamic regulation (i.e. a heftier "bleeder" resistor, a more substantial power transformer (if it's under-rated under load, etc.) a choke-input (a henry or 3 would help...) etc...)

Anyway, that TX sounds neat. There's something fun about operating an open-breadboard single-tube TX on the bands today... Just keep your hands (and those of others) clear:-)

<Clint>

982. Re: Ethernet coax antenna feed?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 16:31:47 UTC
From: peter@3com.com
Message-ID: <2758@bridge2.NSD.3Com.COM>
Source record: 117923

In article 2DB6AEFB@msmail.uthscsa.edu, MUENZLERK@uthscsa.EDU (Muenzler, Kevin) writes:

>on the side of the cable is "50 Volts MAX" or something like that. If you
> have
> any of the "standard" rigs on the market that will put out 100 or so watts
> you
> will quickly burn through the cable insulation. If the impedance of the
> cable
> is 50 ohms then by Ohm's law you would be limited to about 50 watts.
> P=EI, I=E/R so P=(E*E)/R so if you are limited to 50 volts then:
>
> P=(50*50)/50 so you would be limited to 50 watts.

I've been using a 3 foot piece on the output of my 350-watt 2-meter repeater
for over 2 years now with no untoward effects. Reflected power has not changed and
the machine is working well. I wouldn't worry about breakdown of the foam insulation.
I don't have a piece of the cable here, but I don't remember seeing the 50 volt
marking.

Peter

Peter Simpson, KA1AXY Peter_Simpson@3com.com
3Com Corporation (508) 836-1719 voice
Northborough, MA 01532 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

983. 40 meter CW transceiver project?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 17:22:14 UTC
From: mmarmor@kuhub.cc.ukans.edu
Message-ID: <1994Apr22.122214.62719@kuhub.cc.ukans.edu>
Source record: 118016

Hello,
I am interested in building my first HF transceiver and would appreciate some comments from the net that might make the project more successful (or at least less frustrating).

I would like to build a simple CW transceiver for 40 meters (or possibly 30 meters) and have been looking through the 1994 ARRL handbook at some basic designs.

Since this is my first experience building HF equipment I want to give my self the best possible chance of success by picking a well known and easily built design.

Can anyone recommend a good "builder in training" 40 meter CW transceiver design? Will I be unhappy with the performance of this type of no frills rig? (It won't be any fun if I can't make a few contacts using it!)

All of the simple transceivers in the Handbook have QRP power levels between 1 and 5 watts RF output. I assume that higher power levels would require either more complex circuitry or more expensive parts. I would prefer to have a transceiver in the 25-50 watt range. Should I build a simple QRP transceiver and then try my hand a building a simple PA, or are there any uncomplicated (i.e. easily built, readily available parts, etc.) transceiver plans I have yet to see that feature power >5 watts?

I am not concerned with portability, just ease of building and useable RX and TX performance. I have access to basic electrical engineering test equipment here at the University as well as all back issues of QST.

I will be attending the Dayton Hamvention next week, does anybody know if there will be any seminars, meetings or booths that I might find helpful for my project?

I would appreciate any help you may be able to give, especially referrals to a well tested project that will fit my needs.

73 DE KG0JT

Mike

984. Re: RS232 help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 21:06:54 UTC
From: cmoore@mothra.rose.hp.com
Message-ID: <2p9e9e$2h0@hpchase.rose.hp.com>
Source record: 118017

The problem is that the BIOS serial routines are expecting hardware handshaking. Quoting from my BIOS manual:

Int 14H XMIT
Transmits a data byte on the serial port specified by the DX register. The function enables REQUEST-TO-SEND and DATA-TERMINAL-READY signals, and then waits on the DATA-SET-READY, CLEAR-TO-SEND, and REGISTER-EMPTY signals...

You need to tie RTS to CTS and DTR to DSR. That should fix the problem.

Chris Moore
N6IYS
cmoore@mothra.rose.hp.com

985. cheap keyer??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-22 22:39:54 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Apr22.163954.1@ccsvax.sfasu.edu>
Source record: 117918

Plan to make a small, simple cheap keyer out of a 555 and some odd parts. I can figure out the details myself, but thought I'd try to avoid reinventing the wheel. There must be such a circuit out there somewhere, no?

Thanks!
-Jim-
K5YUT

986. QRP neswwsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-23 04:51:29 UTC
From: pepperb@govonca.gov.on.ca
Message-ID: <1994Apr23.045129.3024@govonca.gov.on.ca>
Source record: 117919

Oh please, I think, I suspect, I know for sure (I believe) that there is QRP usenet/newsgroup for radi amateur qrp interests and building. Could anyone tell me what the rec. or whatever group is called (i.e. rec.radio.amateur.low-power ?) I am new, and my key word searches are not quite so great.
Thanks. Any info as to where to hang out for such things would be appreciated. I figured the homebrew area would know about such a closely associated thing as qrp.
73 de VE3VAW

987. Re: QRP neswwsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-23 10:38:39 UTC
From: equis@netcom.com
Message-ID: <equisCopK8F.5z4@netcom.com>
Source record: 117941

hi brien: Yeah, I really thought, naively, that "homebrew" corresponded
to actual beer. I know I'm just vaguely anonymous but I subscribed to
this news group out of an interest in the art of properly fermented
yeast. I'm trying to find the connection to amateur radio. Please
help.

Brien Pepperdine (pepperb@govonca.gov.on.ca) wrote:

: Oh please, I think, I suspect, I know for sure (I believe) that there is
: QRP usenet/newsgroup for radi amateur qrp interests and building. Could
: anyone tell me what the rec. or whatever group is called (i.e.
: rec.radio.amateur.low-power ?) I am new, and my key word searches are not
: quite so great.
: Thanks. Any info as to where to hang out for such things would be
: appreciated. I figured the homebrew area would know about such a closely
: associated thing as qrp.
: 73 de VE3VAW

988. Re: 40 meter CW transceiver project?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-24 17:59:04 UTC
From: jimn0oct@aol.com
Message-ID: <2pec18$oel@search01.news.aol.com>
Source record: 117926

In article <1994Apr22.122214.62719@kuhub.cc.ukans.edu>,
mmarmor@kuhub.cc.ukans.edu writes:

>Can anyone recommend a good "builder in training" 40 meter CW
>transceiver design? Will I be unhappy with the performance of
>this type of no frills rig? (It won't be any fun if I can't make
>a few contacts using it!)

I can only address what little experience I've had--starting with QRP. Try a simple design using a crystal for the frequency generation, rather than a VFO (to keep it simple). Shoot for 1-2 watts output. Once you're happy with that (and you will make contacts with it), you might try converting the oscillator to a VXO nd adding some more power with a PA up to say, 3-5 watts. I've taken this approach and been quite surprised with the contacts I've made, especially on 30 and 40 meters.

Let me know how you fare!

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

989. Re: QRP neswwsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-24 18:00:06 UTC
From: jimn0oct@aol.com
Message-ID: <2pec36$ofc@search01.news.aol.com>
Source record: 117927

Actually, you might combine both: homebrew and hombrew radio! I've tried it and it seems to work well--not at all like those Miller commercials might suggest.

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

990. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 05:27:12 UTC
From: mont@netcom.com
Message-ID: <montCosv5D.K4E@netcom.com>
Source record: 117928

In article <2oojok$226@search01.news.aol.com>,
JimN0OCT <jimn0oct@aol.com> wrote:
>In article <1994Apr14.132347.26126@news.mentorg.com>, jbate@rtp-nc.mentorg.com
>(John Bate) writes:
>
>>I'm trying to find a source for the R2 and T2 pcb as
>
>From reading similar threads and hearing the experience of some local hams, you
>might try calling him. I was just about to make out a check for the R2 board
>myself (sourced all of the parts already). That is the direction I'm going to
>pursue.

Well, I ordered some boards from Applied Radio Science in Dec. 1993. I
just received the order with $5 refund on shipping. Funny thing is, the
return address on the envelope is:

Campbell
Rt 1 Box 195
Chassell, MI 49916

The boards are very well made and I'm glad to get them.

73,
--
Mont Pierce

+---+
| Ham Call: KM6WT Internet: mont@netcom.com |
| bands: 80/40/20/15/10/2 |
| modes: cw,ssb,fm |
+---+

991. TUBE WANTED: CK-1905

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 06:57:42 UTC
From: jbaker@halcyon.com
Message-ID: <jbaker-240494225742@bellevue-ip34.halcyon.com>
Source record: 117929

Does anyone have one or two CK-1905 "nixie" tubes you'd be willing to sell
for $10 ea or less?

--
James Baker
Seattle, WA
jbaker@halcyon.com

992. Re: Trimmer Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 13:53:59 UTC
From: zlau@arrl.org
Message-ID: <1994Apr25.135359.577@arrl.org>
Source record: 117940

If you have plenty of time but no $$$, it is possible to substitute brass or nickel plated brass tuning screws in place of the expensive trimmer capacitors. You can either solder brass nuts or tap the enclosure to hold them in place. Another nut can be used to lock them into place. They don't have much tuning range at 2 meters, but will work if you carefully adjust the number of helix turns.

You could probably sell the "reject" filters at a hamfest to people who want to optimize their VHF reception at other frequencies :-).

: I have since found that Electrosonic carries them....at $20 EACH (Yeowch!).
: At this point, I am looking at Johnson air variables
: as a possible substitute.
: Even they are about $10 each.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

993. QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 14:55:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <CotIpD.A1D@newsflash.concordia.ca>
Source record: 117931

To subscribe to the QRP Newsgroup, send a message to "Majordomo@think.com";
leave the subject area blank and for the body of the message, type
Message-ID: <25APR199409553599@pavo.concordia.ca>
Organization: Concordia University
News-Software: VAX/VMS VNEWS 1.41

"subscribe QRP" (without the quotes)

WARNING: These people are serious QRP diehards (Kilowatt jokers beware) ;-)

-Mark, VE2HVW

994. Wanted : Back issue of 73 Mag. (Sept. 1993)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 17:30:22 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Apr25133022@splinter.coe.neu.edu>
Source record: 117932

Hi:
My friend Thomas is looking for a copy of Sept. 1993 73 Mag. He is interested in an article on a 40 meter loop antenna. Would anyone like to sell the issue or provide a copy of the article? He will send a SASE + copy costs or whatever. Thanks.

-Dean

995. PSK Modem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 18:41:24 UTC
From: parnell_j@kosmos.wcc.govt.nz
Message-ID: <1994Apr25.184124.1@kosmos.wcc.govt.nz>
Source record: 117930

I would like to revisit the thread on how to do PSK demodulation that was running on this newsgroup a month ago.

EXAR XR-2123 is a PSK modulator/demodulator IC which was designed for Bell Standards 201, 212A or CCITT Standard V.22 (1200 Baud), or V.26 (2400 Baud) modems. The information in the EXAR data book about this IC explains in detail how the demodulation is achieved. Both carrier and data recovery are well explained. In addition, a typical modem circuit using the XR-2123 and other ancillary EXAR ICs is given.

Anyone wanting to learn how PSK demodulation is carried out would find the EXAR databook of great value.

Motorola make a pair of ICs, the MC 6172 and MC 6173 which also modulate and demodulate PSK signals. Application Note AN 870 covers the use of these ICs and presumably describes their operation but as I have not seen a copy of the note, I cannot comment further.

These days of course, modem speeds for most purposes are very much higher than 2400 Baud and the signal modulation/demodulation is achieved by digital signal processing. The EXAR and Motorola ICs described above are therefore effectively obsolete.

I wish to make a 2400 Baud modem card which will fit inside the my TNC-2 work-alike Packet Controller and connect to its expansion header. This will allow me to use the V.26 protocol port instead of the 1200 Baud FSK port on the local bulletin board.

Why is there a V.26 port you ask? Well, a number of commercial modems of this protocol became available, were snapped up by the local hams, adapted for packet radio use and put into service.

Question 1: Are the EXAR XR-2123 or Motolola MC 6172 and MC 6173 ICs available now from any source. If so, can someone please advise the source and cost on a one-off basis. They are unobtainable in this part of the world.

Question 2: Is there a DSP design (in either kitset or constructional information plus software form) available for me to build. If so, I would like to know the source and cost.

....
! Jim Parnell ZL2APE !
! ZL2APE@ZL2WA.#60.WLG.NZL.OC 87 Duncan Tce !

```
! Kilbirnie !
! Wellington !
! National Organiser for the NEW ZEALAND. !
! Jamboree on the Air in New Zealand. !
!.....................................................!
```

996. HELP! Recomend signal processing book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 21:01:44 UTC
From: heiss@ualr.edu
Message-ID: <1994Apr25.150144.1@eivax.ualr.edu>
Source record: 117937

Hello all:
I have recently been subjected to a torturous course in signal
processing. This was in large part due to the miserable text book (
"Analog & Digital Signal Processing", H. Baher, John Wiley & Sons, New York
.) used for this course. The book is riddled with errors, ommisions and
missplaced references. Those of us who have used the book can not
understand how it went to press.
I would really like to understand signal processing but need some
help locating some books that are clear and practical, with the emphasis on
practical. I would like to be able to build both analog and digital filters
as well as write signal processing software. I need a book with lots of
"complete" examples.

Thank You
--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail heiss@ualr.edu
****

997. Where can I find assortments of tiny metric fasteners?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-25 21:36:28 UTC
From: dgf@netcom.com
Message-ID: <dgfCou40s.8LC@netcom.com>
Source record: 117942

I would like to find an assortment of tiny metric fasteners (screws, washers, nuts mainly) to replace worn/stripped/missing fasteners on equipment such as HTs and transceivers. I've seen assortments of metric fasteners before but only in larger sizes to be used with cars and so on. Any pointers? 73 Dave WB0GAZ

998. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 00:34:17 UTC
From: zlau@arrl.org
Message-ID: <1994Apr26.003417.7907@arrl.org>
Source record: 117934

Mont Pierce (mont@netcom.com) wrote:

: Well, I ordered some boards from Applied Radio Science in Dec. 1993. I
: just received the order with $5 refund on shipping. Funny thing is, the
: return address on the envelope is:

address deleted.

Unfortunately, having filled all the orders, he
has decided not to accept any more. He says he
will let us know if/when he gets someone to take
over the distribution and support of these boards.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

999. digital RF Broadcasts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 00:38:27 UTC
From: yctcsl@cerfnet.com
Message-ID: <2phrk0$3gn@news.cerf.net>
Source record: 117933
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Need info on sending digital message over RF broadcast of 3 mi radius or less. Like to keep FCC restrictions to a minimum if possible. Message size 8bytes or less. Terrain varies in area of use. need freq that handles obtstruction well.

Thanks in advance =:=)
Scott Lohman
yctcsl@cerfnet.com
714-589-2047

1000. Re: Where can I find assortments of tiny metric fasteners?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 00:43:41 UTC
From: gay@selkirk.sfu.ca
Message-ID: <gay.767321021@sfu.ca>
Source record: 117947

dgf@netcom.com (David Feldman) writes:

>I would like to find an assortment of tiny metric fasteners (screws, washers,
>nuts mainly) to replace worn/stripped/missing fasteners on equipment such as
>HTs and transceivers. I've seen assortments of metric fasteners before but only
>in larger sizes to be used with cars and so on. Any pointers? 73 Dave WB0GAZ

Try Small Parts Inc.
6901 NE Third Ave
PO Box 381736
Miami, Fla. 33138
(305) 751-0856

(From an old catalog...hope they haven't moved)

1001. Re: Ramsey responsive (was Re: Ramsey kits)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 03:01:17 UTC
From: nagle@netcom.com
Message-ID: <nagleCouJ25.ux@netcom.com>
Source record: 117938

myers@spot.West.Sun.COM (Dana Myers) writes:
>I had the pleasure of chatting with John Ramsey last week at the
>International Wireless Communications Expo. Though I have been
>critical of the FX series radios, I wanted to post a Usenet
>note mentioning that I admire John's energy, enthusiasm, and
>responsiveness to customer desires. I must say, John has a straight-on
>personal style, and that is refreshing.
>Now, I'll call him and see if I can't talk him to selling a 900MHz
>data radio kit....

Now that would be worth having.

My experience with Ramsey kits has been spotty. The stepping motor driver worked fine. The 20MHz FM receiver was shipped with a few parts incorrect and one misdrilled hole on the board, but worked after Ramsey sent me the right parts. The 1GHz motion detector won't even oscillate. (I need to send that one in for repair; I don't have microwave test gear).

Chaney Electronics also makes kits, and some of them are sold at Halted Electronics (Lawerence & Central, Santa Clara, CA). I assembled their "ROAMR robot" kit, which works OK, but the mechanical design is really tacky (the wheels are knobs with rubber bands running around the outside) and it doesn't do much for something that has three ICs, two relays, and about forty discrete components. Also, a few holes in the board were not drilled out.

I appreciate that these guys are trying, but the Q/A still lacks something.

John Nagle

John Nagle

1002. Pinouts for UGN 3501U device?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 08:28:08 UTC
From: cwilliam@helium.Gas.UUG.Arizona.EDU
Message-ID: <2pijao$rlu@auggie.CCIT.Arizona.EDU>
Source record: 117935

In response to an earlier post about measuring EMF, someone kindly
suggested a Sprague (now Electro MicroSystems ?) UGN 3501U,
a magnetic sensor. I now have the device but don't have any info
about what to connect where. It apparently takes an 8-16 v. DC supply
and produces <1 mv out depending on the magnetic field. It is
a square about 1/4 inch wide w/ three pins. On one side it says
UGN 3501U 340 and the other side has a small depressed circle.

Could someone look this up for me? (It took a while to order & I hate
to accidentally destroy it.)

Thanks,

C. Williams

1003. HELP! Recomend signal processing book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 09:10:15 UTC
From: jangus@skyld.grendel.com
Message-ID: <767351415snx@skyld.grendel.com>
Source record: 117936

In article <1994Apr25.150144.1@eivax.ualr.edu> heiss@ualr.edu writes:

> I have recently been subjected to a torturous course in signal
> processing. This was in large part due to the miserable text book (
> "Analog & Digital Signal Processing", H. Baher, John Wiley & Sons, New York
> .) used for this course. The book is riddled with errors, ommisions and
> missplaced references. Those of us who have used the book can not
> understand how it went to press.

Ahhh, J.W. & sons. The Sams Photo-facts of the publishing set.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

1004. SUMMARY: Texas Instrument Speech Chip Uses?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 15:21:25 UTC
From: ren@rap.ucar.edu
Message-ID: <2pjbhl$p2r@ncar.ucar.edu>
Source record: 117939

Several weeks ago I wrote:
>I recently bought a couple of those TI 'Speak 'n (whatever)' toys
>at a second hand store. I've heard they were popular 'hacker'
>sources a few years back. If you have any info how people
>used these, or ftp sites, or magazine articles, please email me.
> And puh-leez, don't ask me to hook it up to an umbrella,
>record player and saw blade to 'Phone-Home'! (tried it, didn't work B^)
>Thanks!

Other than one request for the same info.
Nobody wrote!

ren
dona nobis pacem

1005. Re: QRP neswwsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 19:53:29 UTC
From: bruce@Think.COM
Message-ID: <2pjrfpINN48r@early-bird.think.com>
Source record: 117948

There is no usenet newsgroup devoted to QRP, but there is an Internet mailing list (which I administrate) devoted to the topic. To subscribe, send mail to majordomo@think.com containing the line

subscribe qrp

The list is also available in daily digest form (the volume of the list is pretty heavy); if you would rather receive that, do

subscribe qrp-digest

That being said, there is probably plenty of QRP interest to support a usenet newsgroup rec.radio.amateur.qrp. QRP is a rapidly growing and enthusiastic segment of the hobby. We routinely have 10-25 messages/day on the mailing list among the ~250 subscribers we have. Chuck (K5FO) and I started it as a mailing list a little over a year ago not knowing how much interest there would be, and preferring the intimacy and better S/N ratio generally had on mailing lists compared to newsgroups. If someone wants to drive the process of forming a newsgroup, I certainly wouldn't object, but I don't have the time to do it myself.

--
--Bruce Walker
Thinking Machines Corporation, Cambridge, MA
bruce@think.com; +1 617 234 4810; Aviation: PP-ASEL; Radio: WT1M

1006. Re: digital RF Broadcasts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-26 23:50:37 UTC
From: nagle@netcom.com
Message-ID: <nagleCow4wD.9Mr@netcom.com>
Source record: 117953
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

yctcsl@cerfnet.com writes:
>Need info on sending digital message over RF broadcast of 3 mi radius or less.
>Like to keep FCC restrictions to a minimum if possible. Message size 8bytes or
>less. Terrain varies in area of use. need freq that handles obtstruction well.

There's the 900MHz spread-spectrum band, where unlicenced low-power
operation is permitted. If you used a really low data rate, you might be
able to get a few miles of range. Alan Larson at SRI has done some work
with commercial units for this band.

John Nagle

1007. SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 13:59:59 UTC
From: rich@cmc
Message-ID: <2plr4v$7n0@wiley.ctd.comsat.com>
Source record: 117960
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I am interested in designing an FM transmitter for broadcast in the FM band.

The device will be digitally tuned (not with a screwdriver!).

1. Does anyone have any design information for such a product?

2. There are several commercial ICs available. Any suggestions on which ones to use?

3. Has anyone taken the guts of a cordless phone and modified it for this? It would seem that
this would be the most "elegant & inexpensive solution".

4. Does anyone know where I can download a copy of the FCC regs regarding broadcast in the FM
band? I believe that is: TITLE 47, PART 15.

--

rich@cmc.eng.comsat.com

1008. TEK RADIO.....where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 14:10:15 UTC
From: cmdorat@tc.fluke.COM
Message-ID: <Cox8pD.EGD@tc.fluke.COM>
Source record: 117945
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

Hi, I have heard about a small dedicated data radio called the
"TEK" radio. It supposidly supports 9600 baud packet. I would
like to get my mits on one unfortunately, every one I ask just says
that "they are advertized in QST, look in there."

OK, I admit defeat, I just scanned the latest issue of QST and
cannot find an add for one. If you know the page number of the
add, please let me know. Better if you actually have a phone
number, but the page number will suffice.

Thanks in advance
Richard Kowalsky (N7RAY)

PS: They are Xtal controlled 440Mhz radios ~ $89.00

```
--
----------------------------------------------------------------------------
| Richard Kowalsky ___ ____________ |
| Fluke Corporation __--/ \--__ {____________} |
| cmdorat@tc.fluke.com <---Internet < NCC1701 > / / |
| algedi!n7ray@data-io.com<---Hamnet ----_____---- / / |
| 206-356-6279 <---Audionet _\ \___/_/___ |
| 6920 Seaway Blvd <---Ancientnet }< \ |
| Everett, Wa. 98206 \_____________/ |
| _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _|
| Standard Discalimer: |
| Any opinions or ideas or feats of mental prestidigitation are mine. |
----------------------------------------------------------------------------
```

1009. QST "Compact Loop Antenna" Suggestion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 14:17:56 UTC
From: jcbach@kocrsv01.delcoelect.com
Message-ID: <1994Apr27.141756.7987@kocrsv01.delcoelect.com>
Source record: 117944
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Regarding the article in this months' (May 1994) edition of QST titled
"You Can Build: A Compact Loop Antenna For 30 Thru 12 Meters" . . .

The reviewer mentioned that as he moves the motor forward/backward to "tune"
the antenna (he has a DC motor driving an air variable capacitor) the system
overshoots, "but it didn't take much practice to tune the antenna to nearly 1:1"

Looking at the motor control circuit, Figure 5 on page 36, it seems obvious what
a simple solution is . . . motor breaking. The way the circuit is currently
designed you either apply +V to go forward or -V to go backwards, but when
both buttons are released the motor terminals are open-circuited; thus the only
"force" to stop the motor is the mechanical friction (drag) in the system.

A quicker "stop" can be had by changing the circuit such that when both buttons
are released a "short" is placed across the motor terminals, and thus the back-EMF
will stop the motor. This is how many power door-locks (yes, they are motors NOT
solenoids!) and power windows are wired in cars . . .

To change Figure 5, replace the DPDT switches (one "throw" of which are "no
connects") to SPDT, and rewire as shown (crudely) below:

```
GND----O\
\ "Fwd"
\O------------ Motor+

V+----@---------O
|
|
| GND----O\
| \ "Rev"
| \O------------ Motor-
|
----------O
```

Thus, when both buttons are released, the motor windings are "Shorted", and thus
max drag on the system. When the "Fwd" button is pushed V+ is applied to the
motor, when "Rev" button is pushed -V+ is applied to the motor, and IF you are
so inclined to push BOTH buttons at the same time, then V+ is applied to both
terminals and once again a "short" is applied to the motor.

Please use the "Break before make" type of switches so you are not spiking current
thru the switches at each activation :-)

Hope this helps . . .!
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed

Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Circuits Bldg Blocks Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

1010. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 15:16:44 UTC
From: ed@fore.com
Message-ID: <CoxBrx.56@fore.com>
Source record: 117946
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

1. Does anyone have any design information for such a product?

2. There are several commercial ICs available. Any suggestions on which ones to use?

To answer this question, see radio electronics experimenters
handbook (magazine construction compilation). It had several fm transmitters in
it, although none digitally controlled if I remember. Several stereo though.

3. Has anyone taken the guts of a cordless phone and modified it for this? It would seem that
this would be the most "elegant & inexpensive solution".

I have been inside several cordless phones, all 49mhz type.
They all were xtal controlled, & the one I have now is an
at&t and puts out a tremendous whine along with the
signal on a scanner (around 6khz I estimate), this is filtered out by
the phone base unit, I assume its for control or security to keep the base
from being triggered by remote control toys on 49mhz also.

My $.02

Ed

1011. Re: HELP! Recomend signal processing book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 15:21:25 UTC
From: henrys@netcom.com
Message-ID: <henrysCoxBzp.GuE@netcom.com>
Source record: 117951

heiss@ualr.edu wrote:
: Hello all:
: I have recently been subjected to a torturous course in signal
: processing. This was in large part due to the miserable text book (
: "Analog & Digital Signal Processing", H. Baher, John Wiley & Sons, New York
: .) used for this course. The book is riddled with errors, ommisions and
: missplaced references. Those of us who have used the book can not
: understand how it went to press.
: I would really like to understand signal processing but need some
: help locating some books that are clear and practical, with the emphasis on
: practical. I would like to be able to build both analog and digital filters
: as well as write signal processing software. I need a book with lots of
: "complete" examples.

: Thank You
: --
: **
: Larry Heiss
: University of Arkansas @ Little Rock
: Laser Applications Lab
: e-mail heiss@ualr.edu
: **

Larry,

Theres not much on the book shelves that isnt pretty well steeped in
Math.

Be ready to spend some bucks.

Here is one that you might look into:

"First Principles of Discrete Systems and Digital Signal Processing"
by Robert D. Strum and Donald E. Kirk
Addison-Wesley Publishing Co. ISBN 0-201-09518-1

It has lots of math but if you are into that kind of thing, it might
be ok.

Anybody else have any suggestions?

Henry
--

| Henry B. Smith - NA5K henrys@netcom.com |
| Dallas, Texas |
| |

```
| "I'm not sure I understand everything that I know" |
--------------------------------------------------------------------------
```

1012. Re: HELP! Recomend signal processing book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-27 18:31:38 UTC
From: cmoore@ilx018.intel.com
Message-ID: <2pmb2a$n02@chnews.intel.com>
Source record: 117868

heiss@ualr.edu wrote:

: I would really like to understand signal processing but need some
: help locating some books that are clear and practical, with the emphasis on
: practical. I would like to be able to build both analog and digital filters
: as well as write signal processing software. I need a book with lots of
: "complete" examples. Larry Heiss

Hi Larry, The best DSP textbook I have found is "Introduction to Digital
Signal Processing" by Roman Kuc from McGraw Hill.

73, KG7BK, CecilMoore@delphi.com

1013. Ramsey Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 00:03:06 UTC
From: gianotti@aol.com
Message-ID: <2pmufq$l32@search01.news.aol.com>
Source record: 117949

Anyone have any experience with the new Ramsey fox-finder kit? I am interested in building a TDA type of direction finder and the ads look interesteing.

Send replies.

1014. Liquid state???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 03:45:18 UTC
From: teokb@elec.canterbury.ac.nz
Message-ID: <2pnbge$5lh@cantua.canterbury.ac.nz>
Source record: 117950

Dear newsreaders,

This is my idea for a 'liquid' state radio, which I intend to make for my electronics assignment (worth 50% of years mark). I would like your thoughts on it, and if possible, give me information on how to build the capacitor, the inductor, the antenna, the detector and the battery. It's a crystal set, but it is indeed a very special one (liquid state):

Detector

I intend to make a 'Wollaston' wire detector. This involves silver coating 'Wollaston' wire with silver, and then dipping it into some nitrate solution and this apparently has rectifying properties! Does anyone know what Wollaston wire is, or has information on liquid state detectors?

Capacitor

I'll try and do a metal-plates-in-transformer-oil job. Does anyone know what goes into building one of these? ie. is it easy? To change the capacitance (to tune), you would take out some liquid or put in more.

Inductor

I'm thinking of winding about 500 turns of wire on a ferrite core.

Battery

This is a beer and copper coins job. However, I can only get about 1.2V out of 8 copper coins with beer soaked cloth in between. How can I get about 3V out of it so I can drive a pair of headphones?

Antenna

I think I'll either get a old external TV aerial (but that's for FM, isn't it?), or get lots of wire and run it around trees at the university. Can someone please recommend wire for this?

And that's basically my liquid-state radio.

Why build such a radio, you might ask? Well, the rest of the class will probably be building some hi-tech solid state radio, and I think it'll be a real novelty to build a liquid-state radio.

Thanks, in advance,

Kenneth Teo
teokb@elec.canterbury.ac.nz

1015. Help with ATV antenna tuning, UHF SWR meter advice, general ATV stuff?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 07:03:21 UTC
From: jefman@utcc.utoronto.ca
Message-ID: <jefman-270494230322@pme15.pomo.wis.net>
Source record: 117955
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi, I'm having some difficulty working with my ATV setup. I've got the AEA VSB70, and I've built the 8-element quagi antenna from the ARRL book. I don't seem to be getting the kind of performance I think I should, it's pretty fuzzy at only three miles away with a direct line of sight. I need some advice on how to go about tuning the antenna. What kind of test equipment do people use? I've gone to both my local ham stores and they've told me they don't have any SWR meters that will work up to 500MHz with under one watt of power. With no SWR or power meter, it's pretty hard to tune the antenna. Are there any other methods? Can anyone recommend a good SWR meter? Or should I give up on making my own antenna and just buy one (what the ham store recommended)? Anyone else with experience using the 8-element quagi for ATV? What kind of performance should I expect if it's working properly?

Also, I'm thinking about getting an amp; probably the SAU-4 brick. Does anyone have plans for putting an amp together with this module? Or any recommendations for a better solution?

Finally, are there any ATV resources on the Internet, eg. mailing list, ftp site, etc.?

Thanks in advance... <Jeff ve3 kyh

1016. Re: HELP! Recomend signal processing book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 09:25:09 UTC
From: elendir@enst.fr
Message-ID: <2pnvdl$e57@cismsun.univ-lyon1.fr>
Source record: 117956

```
Cecil A. Moore -FT-~ (cmoore@ilx018.intel.com) wrote:
: heiss@ualr.edu wrote:

: : I would really like to understand signal processing but need some
: : help locating some books that are clear and practical, with the emphasis on
: : practical. I would like to be able to build both analog and digital filters
```

Larry,
I got the book "Digital Signal Processing, a practical approach" from Ad.Wesley.
Can't remember the name of the authors (English), but I'll find it out if you
are interested. The book assumes you have basic complex calcululs understanding,
but still put the emphasis on real designs.

```
73 from Paris !
Vince.

--
PSG --- Paris SG football club. | Ham radio call : F1RCS
------------------------------------------------------------------------
ENST - Ecole Nationale Superieure des Telecommunications, Paris, France
```

1017. Re: digital RF Broadcasts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 12:58:52 UTC
From: zlau@arrl.org
Message-ID: <1994Apr28.125852.5470@arrl.org>
Source record: 117965
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

yctcsl@cerfnet.com wrote:

: Need info on sending digital message over RF broadcast of 3 mi radius or less.
: Like to keep FCC restrictions to a minimum if possible. Message size 8bytes or
: less. Terrain varies in area of use. need freq that handles obtstruction well.

I'm certainly not a regulatory expert, but my experience is that
very low frequencies tend to handle obstructions the best. The
Navy uses them to communicate with submarines. I've actually
heard VLF signals through our solid metal screen room walls.
(it isn't designed to stop such low frequencies). But, generating
strong signals generally requires large antennas and high data
rates are usually considered impossible. Noise at VLF can also
be a big problem. But, if you want signals to go through water,
concrete, and steel, consider frequencies below 30 kHz.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1018. Re: Liquid state???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 13:02:20 UTC
From: jh4658@medtronic.COM
Message-ID: <2poc4s$al0@gazette.medtronic.COM>
Source record: 117954

K.B. Teo (teokb@elec.canterbury.ac.nz) wrote:

: Dear newsreaders,

: This is my idea for a 'liquid' state radio, which I intend to make for
: my electronics assignment (worth 50% of years mark). I would like your
: thoughts on it, and if possible, give me information on how to build
: the capacitor, the inductor, the antenna, the detector and the
: battery. It's a crystal set, but it is indeed a
: very special one (liquid state):

<-stuff deleted->

: Battery
: -------
: This is a beer and copper coins job. However, I can only get about 1.2V
: out of 8 copper coins with beer soaked cloth in between. How can I
: get about 3V out of it so I can drive a pair of headphones?

What brand of beer are you using?

<-stuff deleted->

1019. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 13:30:51 UTC
From: jbate@rtp-nc.mentorg.com
Message-ID: <1994Apr28.133051.21142@news.mentorg.com>
Source record: 117952

> >In article <1994Apr14.132347.26126@news.mentorg.com>, jbate@rtp-nc.mentorg.com
> >(John Bate) writes:
> >
> >>I'm trying to find a source for the R2 and T2 pcb as
> >
> >From reading similar threads and hearing the experience of some local hams, you
> >might try calling him. I was just about to make out a check for the R2 board
> >myself (sourced all of the parts already). That is the direction I'm going to
> >pursue.
>
> Well, I ordered some boards from Applied Radio Science in Dec. 1993. I
> just received the order with $5 refund on shipping. Funny thing is, the
> return address on the envelope is:
>
> Campbell
> Rt 1 Box 195
> Chassell, MI 49916
>
> The boards are very well made and I'm glad to get them.
>
> 73,
> --

I did call Rick Campbell at his home in MI. Nice guy. Told me that they were not able to produce anymore boards through their current supplier. However, he was actively looking for another source for the boards and that there were two potentials on line.

Rick also mentioned that he had talked to Wes Hayward (w7zoi?)
about some enhancements to Rick's design. I'm not sure what they were though.

Be on the lookout for updates and new designs in upcoming QSTs.

73s,

john (ki7hs)

1020. Screen voltage on 4CX250B's: One more question...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 19:03:37 UTC
From: dgf@netcom.com
Message-ID: <dgfCozGy2.7Gy@netcom.com>
Source record: 117967

Thank you for the comments on my last posting about 4CX250B screen voltage supplies. From this I gathered that a shunt regulator was good, and a series regulator was bad (due to possible negative screen current). On this advice, I picked up some 100V 50W zeners, and I already have some 27V 10W zeners. I'll arrange these into a shunt regulator, but here's the questions:

(1) To have choice of several screen voltages, can I start w/ say 300V shunt regulated, then use some of the 27V zeners reverse biased in series to cut the voltage if desired, or should I arrange taps in the shunt zener string itself (i.e., two 100V and four 27V zeners in the shunt regulator)?

(2) For two tubes, should I feed them from a common screen voltage supply, or give each it's own separate zener shunt regulator?

(3) I was told several times that the screens can be killed due to excessive screen current (ask me - I nuked an 8874 grid in my earlier days - $$!$$!!!); would a low-current fuse on each screen DC feed work (say 1/32A per tube) or should I try for a solid state regulator?

Or should I give up on the whole mess and go for grounded grid ;-)

73 Dave WB0GAZ dgf@netcom.com

1021. Re: Liquid state???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 20:29:58 UTC
From: mac@cis.ksu.edu
Message-ID: <mac.767565185@depot.cis.ksu.edu.cis.ksu.edu>
Source record: 117957

>K.B. Teo (teokb@elec.canterbury.ac.nz) wrote:

> This is my idea for a 'liquid' state radio, which I intend to make for
> my electronics assignment (worth 50% of years mark)....

> Battery
> -------
> This is a beer and copper coins job. However, I can only get about 1.2V
> out of 8 copper coins with beer soaked cloth in between....

Make a taller stack.
Use lemon juice.
Or use urine to make a "primary" cell
(often called a "P-cell" for obvious reasons! :-)

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home
INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

1022. Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 20:55:12 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.767566512@melpar>
Source record: 117966

In a recent on-the-air discussion, I pointed out the error of mounting a two-meter yagi in the vertically-polarized position while using a metal mast (assuming that the antenna mounts from the center of the boom and not at one end, the latter being common for 3- and 4-element yagis).

One of the on-the-air participants, admittedly a new ham, became very defensive and said that he used a Cushcraft A147-11 vertically polarized on a metal mast, and his antenna "had directivity."

So, I have a couple of questions based on my assumptions as follows:

1) I assumed that a metal mast, being in effect a non-resonant "extra" element suddenly stuck in the middle of a parasitic array, would detune the antenna and probably throw the radiation pattern off by creating either more than one lobe or skewing the main lobe above or below the plane of the array by some noticeable amount. Is this assumption anywhere close to correct?

2) I once heard two hams testing a A147-11 which ham A had just installed, and he was trying to figure out why station B was stronger when the antenna was about 30 degrees off-azimuth from Station B's known location (the antenna was vertical, BTW, and the two stations were about 60 miles apart). Ham A was using a - you guessed it - metal mast. Does this result sound reasonable?

3) Has anyone out there ever purposely installed a yagi array vertically using a metal mast and tried to measure the effects (VSWR, azimuthal pattern accuracy, etc.)? I have a A148-10S which is currently mounted horizontally, and have been toying with rotating it into the vertical plane and trying to measure the effects, but maybe someone else has tried it out of scientific curiosity.....

(|_|) * Paul H. Bock, Jr. K4MSG * Internet: pbock@melpar.esys.com
| |) * Senior Systems Engineer * Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from around it....." - anonymous radiotelegraph operator

1023. Re: Help with ATV antenna tuning, UHF SWR meter advice, general ATV stuff?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-28 21:04:41 UTC
From: "F. Kevin Feeney" <fkf1@cornell.edu>
Message-ID: <2pp8d9INNh9i@newsstand.cit.cornell.edu>
Source record: 117869
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <jefman-270494230322@pme15.pomo.wis.net> Jeff Mann,
jefman@utcc.utoronto.ca writes:
>don't seem to be getting the kind of performance I think I should, it's
>pretty fuzzy at only three miles away with a direct line of sight. I need
>some advice on how to go about tuning the antenna. What kind of test
>equipment do people use? I've gone to both my local ham stores and
they've
>told me they don't have any SWR meters that will work up to 500MHz with
>under one watt of power. With no SWR or power meter, it's pretty hard to
>tune the antenna. Are there any other methods? Can anyone recommend a
good
>SWR meter? Or should I give up on making my own antenna and just buy one
>(what the ham store recommended)? Anyone else with experience using the
>8-element quagi for ATV? What kind of performance should I expect if it's
>working properly?

Hi Jeff,
I've been using quagis on ATV and other stuff for several years now with
good results. I suspect that the bandwidth of a quagi, though better than
a straight yagi, is still a bit narrow for a full atv signal, but it
seems to
work. I get a low swr for about 3-4 mhz bandwidth typically.

I've typically cut mine for the video carrier frequency or a little
higher,
tuned them using a radio shack VHF/UHF wattmeter/SWR bridge and my ht
and then tweaked them with the video signal. The RS meter has a 15 and 60
watt scales, isn't terribly accurate, but it can tell you when you are
reducing
the reflected power and give you a feeling for how good or bad the
antenna is.
Do I trust the SWR measurement, not a bit. But that doesn't mean it isn't
useful.
(cheap too, $30 currently) I usually use my HT to take swr measurements at
1 mhz intervals and trim the driven element and if necessary the
reflector to
get the response I want. SWR with the video signal will be higher than
with a
carrier because parts of the signal (sound carrier, etc) will be up the
swr curve
a bit and you have a lower sideband (well,you don't) that is out of the
passband of
the beam. Haven't toasted any finals yet with this rough and ready

method.

I took the data in the handbook for the 440 and 432 quagis, developed a simple
pascal program to interpolate them to get data for other frequencies, and use
that to calculate antennas for need (421 for repeater reception, 439 for the
input or simplex, 435 for Oscar work, etc)

Currently we are using a home brewed quagi (built on a 2x4 boom - usually I use
a 1x2) for our ATV repeaters transmit antenna. I use a couple for field shots, other
stations in the area use them for both transmitting and receiving. So they do work.
Ranges are in the 10-20 mile range for P4-P5 from the repeater running 10 watts
at good elevation. Talking back to the repeater range with a watt runs in the 5 mile
plus range with good results. Sounds like there is something awry in your system at
one end or another - or it could just be terrain.

Be interested in hearing about your experiences - here or email.

73 de Kevin, WB2EMS

1024. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 00:03:33 UTC
From: zardoz@ornews.intel.com
Message-ID: <2ppit6$aeh@ornews.intel.com>
Source record: 117958

In article <phb.767566512@melpar> phb@syseng1.melpar.esys.com (Paul H. Bock) writes:
> In a recent on-the-air discussion, I pointed out the error
>of mounting a two-meter yagi in the vertically-polarized
>position while using a metal mast (assuming that the antenna
>mounts from the center of the boom and not at one end...

> One of the on-the-air participants, admittedly a new ham,
>became very defensive and said that he used a Cushcraft
>A147-11 vertically polarized on a metal mast, and his antenna
>"had directivity."

According to my simplex pal across town, his Cushcraft yagi manual actually says to mount them that way or at least it has pictures of the yagi vertically mounted with the mast sticking up only a couple of inches above the boom. Other weirdness in the Cushcraft manual is a picture showing the coax routed across the top of the insulated elements. Maybe the marketing folks at Cushcraft took all the pictures. I've seen their collinear arrays upside down in magazine ads.

>1) I assumed that a metal mast, being in effect a non-resonant
>"extra" element suddenly stuck in the middle of a parasitic
>array, would detune the antenna and probably throw the radiation
>pattern off by creating either more than one lobe or skewing
>the main lobe above or below the plane of the array by some
>noticeable amount. Is this assumption anywhere close to correct?

I've heard that if you have to do it, then stick the mast up until its even with the top elements so as not to destroy the symmetry so much. I've modeled both ways with the MN antenna program and it screws up the pattern pretty good but mostly at the expense of forward gain. My real experience is not so easily measured but I know a 7 element 2 meter yagi improved for both vertically and horizontally polarized signals after I mounted it horizontal. Previously I had tried both metal and wood masts but still ran the coax down the wood mast with the yagi vertical. The coax will also become an unbalanced and unwanted element this way.
My KLM 2M14C circular yagi manual says to mount the thing on a non-conductive mast or boom and run the coax off the back end. It works okay this way. I found a telescoping fiberglass broom or window squeegee pole at the hardware store that is pretty strong and about 6 feet long when collapsed. You only need to get about 4 feet away from metal but 6 or 7 feet is better at 2 meters.

I don't know what others think about this but the only place
for a metal mast on a vertically polarized yagi is on the end
where it may act as a reflector.
Better yet, buy two yagis and cophase them on a horizontal
boom.

--
zardoz@ornews.intel.com WA7LDV

1025. Re: How to fix a flaky HP612A Signal Generator?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 03:14:05 UTC
From: joekd4uow@aol.com
Message-ID: <2ppu1t$b6n@search01.news.aol.com>
Source record: 117959

I'm not sure what the circuit looks like inside the 612. I'll pull the schematics tommorow and look. Most of the HP sig gens I work with(older ones anyway)
work with a tuned cavity oscillator. Newer ones are based on the Yig tuned oscillator which is tuned by means of a low intensity magnetic field around the Yig mass.

I have never had a problem personnally with one of the HP tuned cavity type oscillators, but I have heard of them failing sometimes. Most of the Hp sig gens that used tuned cavity oscillators (the 8640 in particular) used the Tuned cavity to generate the highest band of frequencies that would be output. The tuned cavity can be a harmonic rich environment and all you had to do was filter the output of the cavity to the right band of frequencies. So long as you had a signal across one full band (usually the highest band), the oscillator was okay. If you lost other bands, it was normally the filter circuit or the cams in the switch that selected the proper filter network.

If we still have the 612 service manual, I should know more about it tommorrow.

Joe Freeman
Microwave Metrology
Raytheon Support Services Company

1026. Re: Screen voltage on 4CX250B's: One more question...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 06:48:02 UTC
From: nx7u@aol.com
Message-ID: <2pqaj2$eeg@search01.news.aol.com>
Source record: 117961

In article <dgfCozGy2.7Gy@netcom.com>, dgf@netcom.com (David Feldman) writes:

>Or should I give up on the whole mess and go for grounded grid ;-)

My input: on the smaller tetrodes like the 4CX250B, grounded grid does not absolve you from supplying screen voltage. Many, many times have the EIMAC guys written that you don't tie grid and screen together in cathode-driven with small tetrodes, because that darn screen will still draw current and melt down.

You can (of course) do it with "higher perveance" tubes like 4-400A, 4-1000A, etc. But, unfortunately, you're still stuck with the screen supply!

1027. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 12:46:32 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.767623592@melpar>
Source record: 117962

A couple of followup comment from the original poster:

> One of the on-the-air participants, admittedly a new ham,
>became very defensive and said that he used a Cushcraft
>A147-11 vertically polarized on a metal mast, and his antenna
>"had directivity."

NOTE: My on-the-air comments did not suggest the antenna
had "no directivity", only a screwed-up pattern, but the
"defensive" ham took it that way.....

>pattern off by creating either more than one lobe or skewing
>the main lobe above or below the plane of the array by some

Poor choice of words; "above or below the plane of the array"
implies the antenna is horizontal when it isn't; what I mean
here is that the major lobe no longer points in the same direction
the antenna is pointed because of the deleterious effect of the
metal mast, which is now parallel to the parasitic directors and
has a detuning effect.

(|_|) * Paul H. Bock, Jr. K4MSG * Internet: pbock@melpar.esys.com
| |) * Senior Systems Engineer * Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from
around it....." - anonymous radiotelegraph operator

1028. Re: TEK RADIO.....where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 14:04:20 UTC
From: "William P. Osborne" <wosborne@nmsu.edu>
Message-ID: <39847.wosborne@nmsu.edu>
Source record: 117963

On Wed, 27 Apr 1994 14:10:15 GMT,
Richard Kowalsky <cmdorat@tc.fluke.COM> wrote:

>Hi, I have heard about a small dedicated data radio called the
>"TEK" radio. It supposidly supports 9600 baud packet. I would
>like to get my mits on one unfortunately, every one I ask just says
>that "they are advertized in QST, look in there."

Richard they are TEKK Inc. radios and we are using one for the university packet node to get from mountain top to the Internet Gateway on campus. It works ok, but it was a mess to get the deviation setup (you will neeed some good test eq.- we used HP specctrum and a telemetery receiver). Their address is 226 NM Parkway, Kansas City, MO. 64150 phone 1-800-521-tekk and fax 816-746-1093. Hope that helps. 73 Bill

1029. Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 14:25:37 UTC
From: vinod@watson.ibm.com
Message-ID: <2pr5d1$l20@watnews1.watson.ibm.com>
Source record: 117880

I took my no-code tech exam couple of weeks back, and
am now learning code from tapes while waiting for the
licence. I would like to get up to 13wpm so that
I can upgrade to general when I take the exams.

I would like to have a code-practice reciever to
get the code practice sessions from W1AW and also
perhaps to listen to other conversations going on
in the various bands. Since I don't know what
kind of radio I would eventually want, I don't really
want to buy a traceiver yet. Most of the cheaper
commerically availabe receivers don't receive CW and SSB.
So, I am thinking of building
a simple receiver, either as a project or
preferrably from a kit. I will basically have only a
multi-meter available, and I don't have any experience
with building RF circuits.

Given the above,
1. Can somebody recommend a good, inexpensive kit ? I just
got the catalog from ten-tec yesterday, they have a a kit
for $39. This is a new business for them, so I don't expect
anybody has built this yet, but if they have, I would like
to hear about it..

2. Is this kind of project feasible, or am I better off looking
for a used receiver? (Well, I intend to look at the local hamfests
anyway, I was just wondering about how feasible the task is in
general, given that I don't have much test equipment).

Thanks for any comments, advice, references etc. in advance.
--vinod
email: vinod@watson.ibm.com

1030. Adjusting vertical polarization of yagi

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 14:57:56 UTC
From: dgf@netcom.com
Message-ID: <dgfCp108K.po@netcom.com>
Source record: 117964

In article <phb.767566512@melpar> you write:
> In a recent on-the-air discussion, I pointed out the error
>of mounting a two-meter yagi in the vertically-polarized
>
>3) Has anyone out there ever purposely installed a yagi array
>vertically using a metal mast and tried to measure the effects
>(VSWR, azimuthal pattern accuracy, etc.)? I have a A148-10S
>which is currently mounted horizontally, and have been toying
>with rotating it into the vertical plane and trying to measure
>the effects, but maybe someone else has tried it out of
>scientific curiosity.....
>
>

I'm posting this because e-mail to you bounced.

When I mounted my Cushcraft 15 element 2M yagi on the center of my mast in vertical polarization, I arranged it so the person at the top of the tower could adjust the axial rotation (of the boom) while I monitored SWR at the bottom of the tower (thru about 60' of RG213). The bottom line is the SWR went way up (over 2:1) within 10 degrees of true vertical, and we settled on about 20 degrees off vertical (favoring the orientation that improved drainage away from the balun box) which minimized SWR (not the absolute minimum, but I accepted a 1.3:1 as OK).

In this situation, I get about 10 dB gain *over* a diamond 10 foot gain vertical which is mounted about 10 feet higher on the tower (at the very top of the mast). Everything is operating about as expected (the diamond has about 6-7 dB of gain on it's own, and the beam appears to have about 10 dB more gain in it's favored direction).

I did not measure "directivity" or any other factor in the straight-vertical orientation, because the higher SWR was disabling my brick at the bottom of the tower.

I hope this helps.

73 Dave WB0GAZ dgf@netcom.com

1031. FTP site with 16,000 CIRCUIT references

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-29 16:37:16 UTC
From: psawatzk@uoguelph.ca
Message-ID: <2prd3s$o46@nermal.cs.uoguelph.ca>
Source record: 117884

Thought this group would be a good place to make it known that we have a database of about 16,000 bibliographic references (from over 350 magazines/journals) of articles/papers containing practical electronic circuit designs.
Just ftp gaitlab1.uwaterloo.ca
Directory /pub/circuits/demo contains a small demo.
Directory /pub/circuits/main has the big one (~3Mbytes before unzipping, ~9Mbyte after)
[be sure to give a bin command before getting the binary files]
The database has a front end for searches on title, device numbers (eg 741, 2N3904, MC1496, etc.), and circuit descriptions. The individual files are also dBASE-compatible, so if you don't like the front end you can use many other utilities to extract data.
Subject matter covers just about every field, including RF, audio, computers, interfacing, DSP, etc.
Copyrights are honored (registered with CCC - the Copyright Clearance Center), so if anyone needs hard copy of articles from those periodicals that qualify, they can get them. We're hoping to update annually or semi-annually.
Any comments and suggestions are welcome.
--
==========
Peter Sawatzky
>>> e-mail psawatzk@uoguelph.ca <<<

1032. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-30 05:29:50 UTC
From: mbm1949@u.cc.utah.edu
Message-ID: <2psqce$h0q@u.cc.utah.edu>
Source record: 117889
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Rich Krinsky (rich@cmc) wrote:

Chopped and Edited at will.....

: I am interested in designing an FM transmitter for broadcast in the FM band.

: The device will be digitally tuned (not with a screwdriver!).

: 1. Does anyone have any design information for such a product?

You can order a complete kit or just schematic from Rasmey Electronics.

: 3. Has anyone taken the guts of a cordless phone and modified it for this? It would seem that
: this would be the most "elegant & inexpensive solution".

Wouldn't be worth the effort, you could make one eaiser.
And, much cheaper.

: 4. Does anyone know where I can download a copy of the FCC regs regarding broadcast in the FM
: band? I believe that is: TITLE 47, PART 15.

If you buy the kit from Ramsey Electronics, you'll get part of the
regulations.

Mike Miles

1033. Re: digital RF Broadcasts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-04-30 19:39:49 UTC
From: tafu@lynx.dac.neu.edu
Message-ID: <2puc65$b34@chaos.dac.neu.edu>
Source record: 117870
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Zack Lau (KH6CP) (zlau@arrl.org) wrote:
: yctcsl@cerfnet.com wrote:

: I'm certainly not a regulatory expert, but my experience is that
: very low frequencies tend to handle obstructions the best. The
: Navy uses them to communicate with submarines. I've actually
: heard VLF signals through our solid metal screen room walls.
: (it isn't designed to stop such low frequencies). But, generating
: strong signals generally requires large antennas and high data
: rates are usually considered impossible. Noise at VLF can also
: be a big problem. But, if you want signals to go through water,
: concrete, and steel, consider frequencies below 30 kHz.

Maybe I can share my past experience on designing 900MHz cordless phone.
It is true that frquencies as high as 900MHz has no advantage for
penetrating concrete. The $100 worth 900MHz cordless phone has coverage
similar to a $30 46-49MHz counterpart. Also at high frequencies,
problems associate with multipath fading become serious.

However, it is a trend that communication devices are getting higher and
higher in operating frequencies. That may be due to the following
points:

1. There is virtually no room at the lower end of the spectrum. On the
other hands, higher the frequency, wider the bandwidth will be.

2. Consumer product must have a small size. Low frequencies require
huge antennae.

3. With spread spectrum technology, the problem of multipath can be more
or less improved.

Regards
-Tiger

1034. Re:Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-01 18:40:33 UTC
From: janc@icebox.iceonline.com
Message-ID: <Cp4zq8.2qI@iceonline.com>
Source record: 117871

>
>1) I assumed that a metal mast, being in effect a non-resonant
>"extra" element suddenly stuck in the middle of a parasitic
>array, would detune the antenna and probably throw the radiation
>pattern off by creating either more than one lobe or skewing
>the main lobe above or below the plane of the array by some
>noticeable amount. Is this assumption anywhere close to correct?
>

I've installed a Yagi vertically mounted on a metal mast and I experienced detuning. I couldn't tell you how the radiation pattern was affected since at the time I had no way of determining that - but since I was operating on 2m, I installed a horizontal counterbalanced boom and remounted the antenna a few feet away from the mast. That seemed to help a good deal, although there was still a little bit of detuning remaining.

---
janc@icebox.iceonline.com : If you eat a live toad first thing in the
: morning, nothing worse will happen to you all
Fido: 1:153/7116 : day.
Amateur Radio: VE7FJC : To you or the toad.

1035. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-01 21:10:56 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <Cp56u9.E60@iat.holonet.net>
Source record: 117872

mont@netcom.com (Mont Pierce) writes:

>In article <2oojok$226@search01.news.aol.com>,
>JimN0OCT <jimn0oct@aol.com> wrote:
>>In article <1994Apr14.132347.26126@news.mentorg.com>, jbate@rtp-nc.mentorg.com
>>(John Bate) writes:
>>
>>>I'm trying to find a source for the R2 and T2 pcb as
>>
>>From reading similar threads and hearing the experience of some local hams, you
>just received the order with $5 refund on shipping. Funny thing is, the
>--
>Mont Pierce
Word from the mailing list qrp@think.com has it that Rick is no longer
making the boards, and is looking for someone to take over.

About time; poor guy has probably been swamped, and several stories of
long waits, SASE's not returned (3 in my case!).

My wish would be for a supply of matched inductors/capacitors for those IF
diplexers in the R2 -- I've done without them, and it works well, but
would be nice to do it perfectly!

Maybe some kit supplier could provide 1) boards 2) partial kit, including
the precision stuff and the inductors/caps that have to be matched, or 3)
complete kits.

Any takers?

John K0JD

1036. Re: Screen voltage on 4CX250B's: One more question...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 12:38:33 UTC
From: drs@ccd.harris.com
Message-ID: <1994May2.123833.9783@ccd.harris.com>
Source record: 117881

NX7U (nx7u@aol.com) wrote:
: In article <dgfCozGy2.7Gy@netcom.com>, dgf@netcom.com (David Feldman) writes:

: >Or should I give up on the whole mess and go for grounded grid ;-)

: My input: on the smaller tetrodes like the 4CX250B, grounded grid does not
: absolve you from supplying screen voltage. Many, many times have the EIMAC
: guys written that you don't tie grid and screen together in cathode-driven with
: small tetrodes, because that darn screen will still draw current and melt down.

: You can (of course) do it with "higher perveance" tubes like 4-400A, 4-1000A,
: etc. But, unfortunately, you're still stuck with the screen supply!

--
I must have missed the original post for this. I understand that it is best to
provide both screen voltage and grid bias voltages for a cathode driven 4CX250
tube (grounded grid). I'm not sure what the ideal voltages are, but would
guess that at 2kv plate voltage, you might want something about -100 grid and
+250 screen. The data sheets would tell you for sure.

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |

1037. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 14:18:01 UTC
From: "William P. Osborne" <wosborne@nmsu.edu>
Message-ID: <40595.wosborne@nmsu.edu>
Source record: 117873

On Thu, 28 Apr 1994 20:55:12 GMT,
Paul H. Bock <phb@syseng1.melpar.esys.com> wrote:

> In a recent on-the-air discussion, I pointed out the error
>of mounting a two-meter yagi in the vertically-polarized
>position while using a metal mast (assuming that the antenna
>mounts from the center of the boom and not at one end, the
>latter being common for 3- and 4-element yagis).
Paul: This is an excellent problem for testing with the newer versions of MIninec or NEC on the market. I have done a good bit of modeling of stacked and interlaced 10/15/20 meter yagis and can confirm that a 20 meter element in the middle of a 15 meter yagi is bad news in that it can cost you 1 to 1.5 dB of gain, change the input Z some and cause most anything to happen to the front to back. I have not tried a random length mast but I would expect the same sort of results. 73 Bill

1038. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 14:38:55 UTC
From: mtracy@arrl.org
Message-ID: <89680@mt.arrl.org>
Source record: 117874
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command
in your message.

IMPORTANT: Please use the quit command in your message. This will
prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling
written requests. Any questions on the info-server or the content
of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the
reply address is redirected to keep bounced messages from endlessly
looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the
internet better access to the knowledgeable technical staff here
at ARRL HQ. Questions relating to Amateur Radio and related
technical topics are welcome. To use this service, send a normal
e-mail message to tis@arrl.org with your question spelled out in
plain english. For best service, be as specific as possible and
keep your line length in messages to a maximum of 80 characters.
Due to personnel limitations, priority will be given to questions
from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the
file prospect (send prospect) for information on how to easily get
started in this fun hobby.

FILENAME SIZE DATE DESCRIPTION
--- --- --- ---
PROSPECT.TXT 2k 930514 How to get your Amateur Radio license
EXAMS.TXT 52k 930629 Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k 921020 Examinations - what to bring - requirements
USERS.TXT 6k 930119 List of HQ Email addresses
ARRLCAT.TXT 39k 930709 Catalog of ARRL Publications - commercial content
JOIN.TXT 2k 930621 How become an ARRL member
SERVICES.TXT 5k 930621 A condensed list of ARRL membership services
TOUR.TXT 28k 930621 An electronic tour of ARRL Headquarters
DIR.HQ 5k 930310 Visiting ARRL HQ - diretions and tour information
HFBANDS 7k 921203 Breakdown of users of HF spectrum
Q-SIGS 1k 921203 ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k 930120 W1AW schedule of transmissions and operation
PRODREV1.TXT 12k 930227 Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k 930227 Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k 931120 QST Bibliographies List
RFIGEN.TXT 37k 930120 How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k 930607 Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k 930318 Lots and lots of ham/electonic company addresses
KITS.TXT 6k 930430 List of companies that sell kits
BBS.TXT 12k 930601 List of ham-radio land-line bulletin boards
FAQ1.TXT 25k 930707 Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k 930707 Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k 930707 Amateur Radio Advanced and Technical Questions

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American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

1039. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 19:17:48 UTC
From: Kenneth.E.Harker@Dartmouth.Edu
Message-ID: <2q3jks$bhl@dartvax.dartmouth.edu>
Source record: 117875

In article <2pr5d1$l20@watnews1.watson.ibm.com>
vinod@watson.ibm.com (Vinod Narayanan) writes:

> I would like to have a code-practice reciever to
> get the code practice sessions from W1AW and also
> perhaps to listen to other conversations going on
> in the various bands.

I bought a kit to do just this thing from a company in
Pennsylvania called Radio Adventures Corp. They have had an ad in the
back of CQ somewhere for a while. It only picks up W1AW on the 40m
band (other bands available) but has very minimalist filtering, so I
can occaisonally hear some English-language SW broadcaster that I can't
quite seem to comprehend (part of which may all be because my antenna
system is just a random wire about 15m long...). The receiver will
definitely pick up W1AW and was somewhat useful as my first kit, as I
got plenty of "oops - all those parts weren't supposed to go on that
side of the PC board, were they?" type of experience out of the way...

==
Kenneth E. Harker N1PVB Dartmouth College Amateur Packet Radio
kenneth.e.harker@dartmouth.edu Hinman Box 1262 n1pvb@w1et.nh.usa.na
(603) 643-5716 Hanover, NH 03755 or n1pvb-5 on 144.99
==
(PGP Public Key now available on request)

1040. Help with Homemade Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 20:02:21 UTC
From: rmp@cica.mlb.semi.harris.com
Message-ID: <1994May2.200221.29729@mlb.semi.harris.com>
Source record: 117876

I am trying to fix an old
Quack Medical Device that has a glass
and foil stacked capacitor inside it.
I have seen similar capacitors inside
Leeds & Northrup equipment. Does
anyone know how big (uFs), these
capacitors tend to be and what the
breakdown voltages might be? I hesitate
to rebuild it.

Russ Pate
WB4VVN
rmp@mlb.semi.harris.com

1041. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 21:50:57 UTC
From: hlester@nelson.as.arizona.edu
Message-ID: <2q3sk1$kl5@auggie.CCIT.Arizona.EDU>
Source record: 117879

In article <2q3jks$bhl@dartvax.dartmouth.edu> Kenneth.E.Harker@Dartmouth.Edu (Kenneth E. Harker) writes:
>
> I bought a kit to do just this thing from a company in
>Pennsylvania called Radio Adventures Corp. They have had an ad in the
>back of CQ somewhere for a while. It only picks up W1AW on the 40m
>band (other bands available) but has very minimalist filtering, so I

Kenneth, what kind of earphone/headphone are you using for this W1AW receiver? I built one for 20 meters and shelved it, because, in any of my "walkman" type headphones, or an old style earphone, the audio output is minimal. I wrote to the fellow, and he recommended Koss "ear-buds", but I'm not so sure I want to invest any more money in this. Also, it has no shielding and is very susceptible to local AM broadcast. I wish I had waited for Ten-Tec to produce their kit line.

Howard

1042. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 22:16:55 UTC
From: hamilton@BIX.com
Message-ID: <hamilton.767917015@BIX.com>
Source record: 117878

Kenneth.E.Harker@Dartmouth.Edu (Kenneth E. Harker) writes:

>In article <2pr5d1$l20@watnews1.watson.ibm.com>
>vinod@watson.ibm.com (Vinod Narayanan) writes:

>> I would like to have a code-practice reciever to
>> get the code practice sessions from W1AW and also
>> perhaps to listen to other conversations going on
>> in the various bands.

> I bought a kit to do just this thing from a company in
>Pennsylvania called Radio Adventures Corp. They have had an ad in the
>back of CQ somewhere for a while. It only picks up W1AW on the 40m
>band (other bands available) but has very minimalist filtering, so I
>can occaisonally hear some English-language SW broadcaster that I can't
>quite seem to comprehend (part of which may all be because my antenna
>system is just a random wire about 15m long...). The receiver will
>definitely pick up W1AW and was somewhat useful as my first kit, as I
>got plenty of "oops - all those parts weren't supposed to go on that
>side of the PC board, were they?" type of experience out of the way...

I also bought one of those Radio Adventures kits but I found it
essentially useless. When I'd talked with the company before ordering,
I was assured, oh, no problem, you should be able to pick up W1AW with
a 10' piece of wire as an antenna, you're so close. (I live outside
Boston, seemingly not all _that_ far from Newington, CT.)

In fact, the kit will pick up W1AW but not so well that anyone I know
could possibly have the patience to try listening. Even with an
outside antenna, you can barely hear it. It's pitiful.

Now, in point of fact, W1AW is just not that strong a signal in many
places. With that same outside wire antenna, I can always find W1AW's
80m and 40m signals on my FT-990 and those signals are always fairly
easy to copy, but nonetheless, there is also quite frequently an annoying
amount of QRM and fading.

My advice is to not to waste your money on something cheap. You only
get what you pay for. If you're looking for some inexpensive code
practice, get the ARRL code practice tapes. They _really_ work and
they're really worth the money.

Don't expect to practice with the W1AW signals (depending on your
location) until you get a "real" radio.

Regards,
Doug Hamilton KD1UJ hamilton@bix.com Ph 508-358-5715

Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117, USA

1043. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-02 22:28:29 UTC
From: mcleman@zso.dec.com
Message-ID: <2q3uqd$5us@usenet.pa.dec.com>
Source record: 117877

"

In article <Message-Id>
vinod@watson.ibm.com (Vinod Narayanan) wrote:

"
>I took my no-code tech exam couple of weeks back, and
>am now learning code from tapes while waiting for the

I saw in QST or CQ a receiver that just received the ARRL broadcasts. It was
in an add. Somewhere in the back. Pick up an issue and check it out.

Jeff
KD1IT/7

1044. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 11:01:55 UTC
From: boyer@rd.eng.bbc.co.uk
Message-ID: <Cp83z8.7A4@bbc.co.uk>
Source record: 117882

William P. Osborne (wosborne@nmsu.edu) wrote:
: On Thu, 28 Apr 1994 20:55:12 GMT,
: Paul H. Bock <phb@syseng1.melpar.esys.com> wrote:

: > In a recent on-the-air discussion, I pointed out the error
: >of mounting a two-meter yagi in the vertically-polarized
: >position while using a metal mast (assuming that the antenna
: >mounts from the center of the boom and not at one end, the
: >latter being common for 3- and 4-element yagis).
: Paul: This is an excellent problem for testing with the newer versions of
: MIninec or NEC on the market. I have done a good bit of modeling of
: stacked and interlaced 10/15/20 meter yagis and can confirm that a 20 meter
: element in the middle of a 15 meter yagi is bad news in that it can cost
: you 1 to 1.5 dB of gain, change the input Z some and cause most anything to
: happen to the front to back. I have not tried a random length mast but I
: would expect the same sort of results. 73 Bill

I did a little modelling with NEC. I first constructed a rough 4 ele yagi
and got a resonable pattern. Then I added a long vertical pole roughly in the
center of the yagi. This really buggered the pattern. Ok so I did this at
Band II where I have a good idea of the size of things off the top of my
head, but it still applies to 2m. Here is my NEC input file.

```
CM vertical Yagi
CM
CM
CE
GW1,25,0.,0.,-.9,-.,0.,.9,.01,
GW2,25,.76,0.,-.76,.76,0.,.76,.01,
GW3,25,1.3,0.,-.6,1.3,0.,.6,.01,
GW4,10,1.9,0.,-.6,1.9,0.,.6,.01,
GW5,25,1.,0.,-2.65,1.,0.,.35,.03,
GE0,0,0.,
EX0,2,13,00,1.,0.,
FR0,1,0,0,96.,0.,0.,
RP0,1,359,1010,90.,0.,0.,1.,0.,0.,
EN
```

So I guess the answer is don't use a metal pole with a vetical yagi.

John B

John.boyer@rd.eng.bbc.co.uk

1045. Re: R2 T2 pcb source wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 12:13:02 UTC
From: jcain1220@aol.com
Message-ID: <2q5f4e$2eq@search01.news.aol.com>
Source record: 117883

In article <Cp56u9.E60@iat.holonet.net>, rohrwerk@orac.holonet.net (John Seboldt) writes:

>Source for R2 T2 Boards and parts

I spoke with Rick Campbell in January after sending an order to Applied Radio Science in November 93. He was very pleasant, and said that the QST articles had unleashed a torrent of orders, suggestions and comments. The poor guy wasn't planning to make a living mailing out PC boards, and was trying to get everyone taken care of. He asked me to be patient, said there were some changes being made to the art work and that they would be along. He was right. In mid-April, the very nicely made boards arrived, along with updated schematics and complete parts lists, including catalog numbers from DigiKey, Mouser and other sources.
I do not know if the rumor that he is no longer accepting orders is true. But he has honored the orders of everyone that I know of -- sometimes it just takes a while.
Jonathan Cain N4SUP

1046. Anyone interested in talking about frequency standards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 14:08:37 UTC
From: jra@lawdept.daytonOH.ncr.com
Message-ID: <jra.107.00092507@lawdept.daytonOH.ncr.com>
Source record: 117885
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Howdy --

I've been interested for a while in time and frequency measurement, and have been collecting bits and pieces of equipment.

At the Hamvention last weekend, I finally found my dream: a rubidium standard. It's a little Efraton thing (part number 100323-101 for what that's worth) and it seems to work.

But one problem is that it only has a single 10MHz output, and my other equipment all wants either 1MHz or 100kHz inputs. So, I need to design some divider and distribution stuff -- and I'm clueless about how to minimize phase shift and jitter, and how pure a sinewave output I need to shoot for (or will my other equipment be happy with squarewave input?).

To get to the point, I'd be interested in corresponding with anyone out there who's knowledgeable about frequency standard/measurement systems, so I can get this thing lashed up properly.

Thanks...

John Ackermann AG9V
jra@lawdept.daytonOH.ncr.com

1047. Please report from DAYTON

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 14:27:49 UTC
From: khopper@kimbark.uchicago.edu
Message-ID: <1994May3.142749.23826@midway.uchicago.edu>
Source record: 117886

Anyone attending DAYTON Hamvention care to SUMMARIZE
QRP developments for the homebrew group ?

TNX,
Ken N9VV

1048. Re: Help with Homemade Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 16:13:01 UTC
From: kludge@netcom.com
Message-ID: <kludgeCp8IDq.C44@netcom.com>
Source record: 117887

In article <1994May2.200221.29729@mlb.semi.harris.com> rmp@cica.mlb.semi.harris.com (Russ Pate) writes:
>I am trying to fix an old
>Quack Medical Device that has a glass
>and foil stacked capacitor inside it.
>I have seen similar capacitors inside
>Leeds & Northrup equipment. Does
>anyone know how big (uFs), these
>capacitors tend to be and what the
>breakdown voltages might be? I hesitate
>to rebuild it.

They tend to be in the picofarad range, but with very high breakdown voltages. They're pretty easy to rebuild too, since they are basically just Reynolds Wrap between sheets of glass. You can calculate the exact value of the capacitance with the formulae in the ITT Handbook (which will also give you the dielectric constant of glass), if you want to replace it, but it would be easier to rebuild it.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1049. Re: FTP site with 16,000 CIRCUIT references

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 16:19:44 UTC
From: kurt@cs.tamu.edu
Message-ID: <2q5tj0$rar@news.tamu.edu>
Source record: 117888

[Description of very neat archive of circuits deleted]

Man, if you could put in a WWW server, and GIF up the circuits, that would
be a DYNAMITE thaing to have!!!!

73/Kurt
--
Kurt Freiberger, wb5bbw kurt@cs.tamu.edu 409/847-8607 fax:409/847-8578
Dept. of Computer Science, Texas A&M University DoD #264: BMW R80/7 pilot
"Even MY hypocrisy has its limits." - "Doc" Holliday, in Tombstone
*** Not an official document of Texas A&M University ***

1050. index

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 18:14:00 UTC
From: noel.reyes@canrem.com
Message-ID: <60.2123.3290.0N19CED3@canrem.com>
Source record: 117892

```
index
quit
```

1051. Idea, 10-10 members....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 19:10:20 UTC
From: wb9omc@constellation.ecn.purdue.edu
Message-ID: <wb9omc.767992220@constellation.ecn.purdue.edu>
Source record: 117890
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radi.amateur.space

I'd like to gauge the interest among members of 10-10 International who
are on the Internet for a group, possibly called:

rec.radio.amateur.1010

The purpose of the group would be multiple:

1) to help disseminate information of general interest to 10-10 members
who have access to Internet.

2) to help 10-10 members set up skeds, nets and other communications events.

3) to help develop interest in not only 10-10 International but to maintain
interest in 10 meters in *spite* of the current lull in the band.

4) to help develop computer operating aids for 10-10 contests and
paperchasing.

5) to serve as one focal point for 10-10 members to discuss the organization,
contest rules, awards rules, etc.

6) other future purposes realted to Amateur Radio and 10-10.

****

I think that emailing me would probably be preferred to clogging up
a number of newsgroups with "me too!" kinds of mail.

If you are interested or have a *brief* thought on the subject, please
email:

wb9omc@harbor.ecn.purdue.edu

flames and/or mail bombs will be ignored, deleted, /dev/null'ed, etc. :-)

If interest seems positive enough, I will make some contacts with the
officers of 10-10 to find out in what ways, if at all, they would
like to make contact and maintain contact with such a newsgroup.

73

Duane, WB9OMC

1052. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 20:18:28 UTC
From: darsmith@spk.hp.com
Message-ID: <Cp8tqt.7FF@spk.hp.com>
Source record: 117891
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

```
:
: If you buy the kit from Ramsey Electronics, you'll get part of the
: regulations.

OK, please post the number or address for Ramsey Electronics. Thanks

Daryl Smith

darsmith@hpspkla.spk.hp.com
```

1053. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-03 22:22:05 UTC
From: bender@doemain
Message-ID: <2q6iqe$jtm@engnews2.Eng.Sun.COM>
Source record: 117905
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Michael Miles (mbm1949@u.cc.utah.edu) wrote:
: Rich Krinsky (rich@cmc) wrote:
: : I am interested in designing an FM transmitter for broadcast in the FM band.
: : The device will be digitally tuned (not with a screwdriver!).
: : 1. Does anyone have any design information for such a product?
: You can order a complete kit or just schematic from Rasmey Electronics.

You didn't read what the poster said - he wants design information for a
DIGITALLY TUNED transmitter - the Ramsey kit uses a screwdriver-type tool to
turn the tuning slug in a coil to set the operating frequency.

: : 3. Has anyone taken the guts of a cordless phone and modified it for this? It would seem that
: : this would be the most "elegant & inexpensive solution".
: Wouldn't be worth the effort, you could make one eaiser.
: And, much cheaper.

How can you judge what would be worth the effort? The poster may find it
very educational to take a cordless phone and modify it to broadcast in the
FM band.

mike

--
---
mike bender | sun microsystems | 415-336-6353 | bender@oobleck.eng.sun.com
The rip-off attitude of many today is "get somebody else to do your job for
you". This is very unprofessional and shows no pride of workmanship. It
demonstrates a deterioration in humanity in the past 30 years. -FRED BACH

1054. *<NE 5534 PINOUT DIAGRAMS>*

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 01:09:06 UTC
From: jimn0oct@aol.com
Message-ID: <2q6sji$b7u@search01.news.aol.com>
Source record: 117893

Does anyone have the pinout diagram for the NE 5534 op amp?? Operating voltage and other specs would be nice, but I really need the pin diagram.

Thank you!

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

1055. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 04:59:17 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCp9Hut.7rH@netcom.com>
Source record: 117894

In article <Cp83z8.7A4@bbc.co.uk> boyer@rd.eng.bbc.co.uk (John Boyer) writes:
>
>So I guess the answer is don't use a metal pole with a vetical yagi.
>
My father used a wooden pole to mount a vertical yagi, but I pointed
out "what about the coax running up the wooden pole to get the radio
connected to the antenna?". He figured that, yes, it will have some
effect, but the coax being smaller than a metal mast, would not be
as bad. Don't really know. Would it help if we used ferrite beads
on the coax spaced something like one every 1/6 th of a wavelength
(or some such smaller than 1/4 wavelength) to be nonresonant? Idea
is to "break" up the coax into many short pieces to RF on the outside,
so it looks like non-significant short pieces of wire. ?

1056. Screen Supply for 4cx250B

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 13:43:15 UTC
From: M.Willis@ee.SUrrey.ac.UK
Message-ID: <9405041443.aa05346@harad.ee.surrey.ac.uk>
Source record: 117896

It is important to get the screen supply right. It needs to be between 250 and 350V depending on class of operation, 330V is good for SSB. Grid needs to be -100 or more for cut off and about -50 during operation. Standing current in linear mode is 100mA. I know that is 200W dissipation at 2Kv on the anode but those are the specifications for a clean signal. The screen supply must be very stable and capable of sourcing or sinking 30mA. When I say stable I mean to a few 10s of mV with speech, not long term drift. It needs to be an active shunt regulator, definately not a string of zener diodes! There are some good designs in the VHF/UHF DX Book. If you are not interested in a clean signal and only want to run in calss C, set the screen at 250V with zeners, bias current to a few mA with the grid at -60V or so and you will get 400W from a single valve. It won't be linear but it wouldn't be in class C would it?

Mike

1057. Re: Help with ATV antenna tuning, UHF SWR meter advice, general ATV stuff?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 13:55:18 UTC
From: zlau@arrl.org
Message-ID: <1994May4.135518.392@arrl.org>
Source record: 117895
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

F. Kevin Feeney WB2EMS (fkf1@cornell.edu) wrote:
: In article <jefman-270494230322@pme15.pomo.wis.net> Jeff Mann,

: Hi Jeff,
: I've been using quagis on ATV and other stuff for several years now with
: good results. I suspect that the bandwidth of a quagi, though better than
: a straight yagi, is still a bit narrow for a full atv signal, but it
: seems to
: work. I get a low swr for about 3-4 mhz bandwidth typically.

True, if you try to optimize a yagi one element at a time, you do
tend to get a narrow bandwidth. But, it is possible to do much
better with very long yagis. The 1992 Eastern States Conference
has a design by Tom Kirby that has plenty of bandwidth for ATV,
even at 135 cm (I realize the band isn't big enough). From 220 to
226 MHz its gain is from 18.4 to 18.7 dBi, while the SWR is below
1.4 to 1. However, even on 70 cm, 25 elements on a 17 ft boom may
be a little too big for some applications. The 22 element K1FO
yagi for 432 also has a pretty wide bandwidth.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1058. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 15:17:39 UTC
From: zlau@arrl.org
Message-ID: <1994May4.151739.790@arrl.org>
Source record: 117897

Paul H. Bock K4MSG (phb@syseng1.melpar.esys.com) wrote:

: 3) Has anyone out there ever purposely installed a yagi array
: vertically using a metal mast and tried to measure the effects
: (VSWR, azimuthal pattern accuracy, etc.)? I have a A148-10S
: which is currently mounted horizontally, and have been toying
: with rotating it into the vertical plane and trying to measure
: the effects, but maybe someone else has tried it out of
: scientific curiosity.....

Kent Britian measured a 2.2 wavelength 435 MHz DL6WU yagi
on his test range.

With the mast all the way through the yagi, the gain varied by
+1 to -10 dB.

With the mast half way through the yagi, the gain varied by +1
to -6 dB. There appear to be more spots to put the mast in
without degrading it too much, but this might be yagi specific.

He varied the spacing between the driven element and the mast.

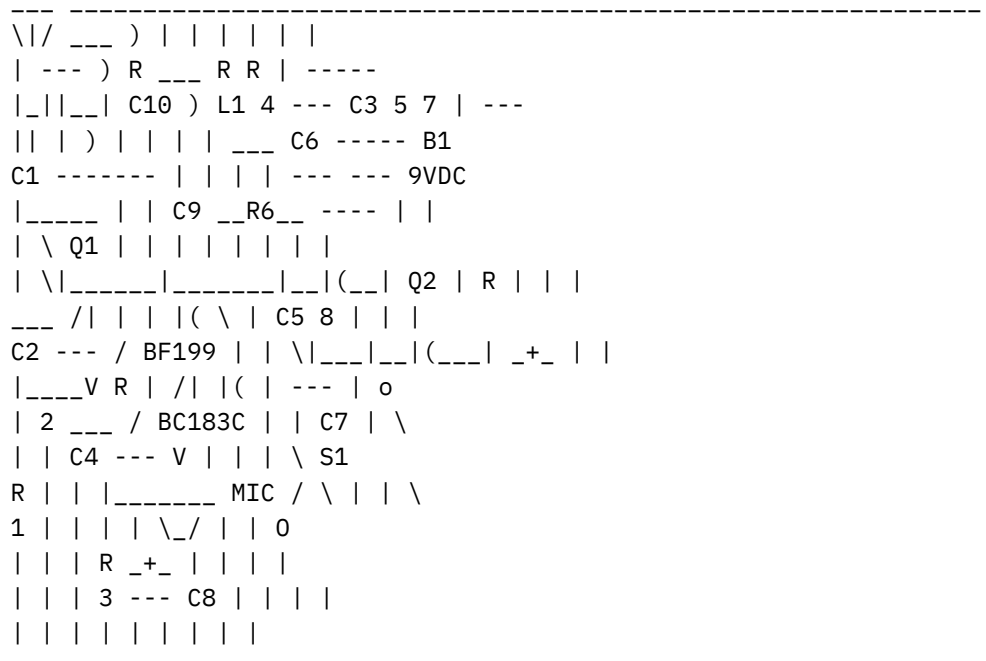
The results appear in the 1993 AMSAT-NA proceedings (11th)

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1059. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 15:38:50 UTC
From: mpaul@unlinfo.unl.edu
Message-ID: <2q8fia$ksv@crcnis1.unl.edu>
Source record: 117898
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

This is the circuit for a simple FM wireless microphone, published in the 1990 Radio Electronics "Electronics Experimenters Handbook", pp. 155-157. It's simple and handy to have - pretty much the same as the "Mr. Microphone" they sell (or used to) at Radio Shack. Range of maybe 100 feet, on standard broadcast FM receivers.



R1 = 100 ohms C1 = 1.5 pf cer. disc Q1 = BF199, NTE 229,
R2, R4 = 10K ohms C2 = 100 pF, NPO ECG 229 or eq.
R3 = 1K ohms C3, C4 = 330 pF NPO Q2 = BC183C, NTE199
R5, R7 = 47K ohms C5, C9 = .1 uF NPO ECG 123AP or eq.
R8 = 4.7K ohms C6 = .001 uF NPO L1 = approx. 1 uH
M1 = electret mike C7 = 22 uF electrolytic S1 = SPST switch
B1 = 9V battery C8 = 6.8 uF electrolytic
C10 = 10 - 40 pF trimmer capacitor.

The coil L1 is so small that in the PC board version of this, it's just a coil etched on the board with traces. I think I breadboarded it with about four or five turns of bell wire around a pencil and that made about the right value. You tune the sucker with the adjustable cap C10. If I remember, the transistors are garden variety ones, though I think Q1 was reasonably high frequency. I was feeding in a signal other than an electret microphone.

This is neat to use with a cheapo FM walkman-type radio for cheap telemetry. (We were actually going to build a device to transmit strain gauge signals from someone's teeth over a whole day's time, and it was to be small enough to be relatively unnoticed INSIDE THEIR MOUTH the whole time. Never did get the O.K. to proceed with that one. Working for university research gets pretty strange sometimes.)

Paul Marxhausen University of Nebraska - Lincoln
Engineering Electronics Shop

1060. European Phone Line Specs???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 17:05:29 UTC
From: francis4@applelink.apple.com
Message-ID: <francis4-040594110947@dfrancis.apple.com>
Source record: 117904

The ARRL Handbook has a section that details the available range of voltage and current on U.S. phone lines. Does anyone know what the numbers are for phone systems in Europe?

-df

****

I'm no young lovely Juliette. (N0YLJ) (;-)

-df

1061. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 17:57:37 UTC
From: jgrubs@voxbox.norden1.com
Message-ID: <qqBTLc5w165w@voxbox.norden1.com>
Source record: 117899

wa2ise@netcom.com (Robert Casey) writes:

> In article <Cp83z8.7A4@bbc.co.uk> boyer@rd.eng.bbc.co.uk (John Boyer) writes:
> >
> >So I guess the answer is don't use a metal pole with a vetical yagi.
> >
> My father used a wooden pole to mount a vertical yagi, but I pointed
> out "what about the coax running up the wooden pole to get the radio
> connected to the antenna?".

Why not make the radiator a co-axial sleeve antenna and rotate
directors amd reflectors around it?

/--\
| Jim Grubs, W8GRT Voxbox Enterprises Tel.: 419/882-2697 |
| jgrubs@voxbox.norden1.com 6817 Maplewood Ave. |
| Fido: 1:234/1.0 Sylvania, Ohio 43560 |
\-+--/

1062. Yagi detuning due to mast

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 17:58:07 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.768074287@melpar>
Source record: 117900

This repost replaces "Vertical yagi mounting" and "Adjusting vertical polarization of yagi" posts.

POSTED REPLY:

of RG213). The bottom line is the SWR went way up (over 2:1) within 10 degrees of true vertical, and we settled on about 20 degrees off vertical (favoring the orientation that improved drainage away from the balun box) which minimized SWR (not the absolute minimum, but I accepted a 1.3:1 as OK).

COMMENT:

Thanks for the info. BTW, the reduction in gain at 20 degrees slant relative to vertical is about 0.5 dB; i.e., your yagi has about a half-dB less gain when you're "looking" at a vertically polarized signal than it would if it was exactly vertical. FYI, 45 degree slant linear polarization reduces the gain 3 dB for either vertically or horizontally-polarized signals.

POSTED REPLY:

I did not measure "directivity" or any other factor in the straight-vertical orientation, because the higher SWR was disabling my brick at the bottom of the tower.

COMMENT:

Well, it looks like no one really has; I feel an experiment coming on.....

POSTED REPLY:

I've installed a Yagi vertically mounted on a metal mast and I experienced detuning. I couldn't tell you how the radiation pattern was affected since at the time I had no way of determining that - but since I was operating on 2m, I installed a horizontal counterbalanced boom and remounted the antenna a few feet away from the mast. That seemed to help a good deal, although there was still a little bit of detuning remaining.

COMMENT:

An interesting variant on overcoming the problem. In both of the cases noted, the amateurs involved measured the VSWR and tried to find a way to reduce it, which is a good approach if pattern variation is ignored. I'll wager, however, that there are quite a few hams using transceivers WITHOUT any automatic VSWR shutdown

who are also using vertical yagis with metal masts and have NO IDEA that the VSWR is excessive. Probably won't hurt the rig, but for any significnt amount of coax they're probably wasting a lot of power as heat in the feedline.

I will probably set up an experiment with some locals and try to map out performance in terms of directive pattern skewing and VSWR as functions of slant angle. I'll repost when I have some data to report. Thanks for the replies!

(|_|) * Paul H. Bock, Jr. K4MSG * Internet: pbock@melpar.esys.com
| |) * Senior Systems Engineer * Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from around it....." - anonymous radiotelegraph operator

1063. Re: Help with Homemade Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 18:01:08 UTC
From: bart@wb6hqk.uucp
Message-ID: <CpAI2B.8vq@wb6hqk.uucp>
Source record: 117902

In article <1994May2.200221.29729@mlb.semi.harris.com writes:

>I am trying to fix an old
>Quack Medical Device that has a glass
>and foil stacked capacitor inside it.
>I have seen similar capacitors inside
>Leeds & Northrup equipment. Does
>anyone know how big (uFs), these
>capacitors tend to be and what the
>breakdown voltages might be? I hesitate
>to rebuild it.

The capacitance of a parallel plate capacitor of typical dimensions is:

C(farads) = 8.85*10^-12 * er * (N-1) * A(m^2) / S(m) where

C = capacitance if farads
er = dielectric constant of dielectric relative to free space.
Somewhere around 2.0 for glass as I recall.
N = number of plates, two for a basic capacitor
A = area of plates in meters squared
S = spacing between plates in meters

bart

bart@wb6hqk.ent-img.com

1064. brushless motor driver chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 19:50:14 UTC
From: mac20@bonjour.cc.columbia.edu
Message-ID: <2q8u9m$rud@apakabar.cc.columbia.edu>
Source record: 117901

I am looking for data sheets on a TA7745P 3-phase commutator chip (18 pin dip i think) for driving a small servo motor.
Toshiba (who makes it) says they sold that division to industrial indexing who say they don't handle single component peices.

I know i can buy it from MCM electronics but they don't happen to have any data on the chip itself.

(i've seen a schematic that implies i wouldn't need to use any outboard driving transistors for this small servo motor i have. this sounds much simpler then using motorola's or National's driver chips which do seem to need external components.)

any info or directions to info would be appreciated.

thanks,
Mike KF2NV
Applied Physics Department
Columbia University

1065. Re: Help with Homemade Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-04 22:49:04 UTC
From: tomb@lsid.hp.com
Message-ID: <CpAvDs.I60@hpcvsnz.cv.hp.com>
Source record: 117903

Bart Rowlett (bart@wb6hqk.uucp) wrote:

: er = dielectric constant of dielectric relative to free space.
: Somewhere around 2.0 for glass as I recall.

Fused quartz is 3.78; I believe any glass will be higher than
that. Most I've seen has been in the 4.5 to 8 range, and
different types of glass really do have rather different er's.
Also, not all glass is low loss...

1066. Re: *<NE 5534 PINOUT DIAGRAMS>*

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 04:36:57 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994May5.043657.25064@vlsi.polymtl.ca>
Source record: 117907

In article <2q6sji$b7u@search01.news.aol.com> jimn0oct@aol.com (JimN0OCT) writes:
>Does anyone have the pinout diagram for the NE 5534 op amp?? Operating voltage
>and other specs would be nice, but I really need the pin diagram.

Jim:

Like most single op-amps, this one follows the norm. The pin out is as follows

1 balance
2 - input
3 + input
4 -v supply (or ground)
5 compensation
6 output
7 +v supply
8 balance/compensation

The 5534 is considered a very "quiet" op-amp. It has been widely used for high end audio equipment and is often seen in professional recording studio sound processing gear and consoles. You pay the price for the quiet performancewith current consumption; 6-10 mA per op-amp! VERY high, but that's the trade off you have to put up with for noise (or lack of it in this case). The op-amp can run on a supply of upto +/- 22V. Nice! At this voltage, this devicecan almost drive 1 watt of power into 600 Ohms.

Hope this is all you need. Nick

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

1067. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 13:07:06 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qar1q$b44@ohlone.kn.PacBell.COM>
Source record: 117906
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

The original requester will find it educational (school of hard knocks)
or impossible to modify a cordless phone for broadcasting in the FM band.

Most of the digitally tuned radios use varactors to tune the circuits
instead of capacitors. If a source of varactors is available, then they
can be substituted for the capacitors. The appropriate circuit must be
used, in addition to the decoding, which is a simple D to A convertor.

1068. Re: Anyone interested in talking about frequency standards?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 13:13:19 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qardf$b44@ohlone.kn.PacBell.COM>
Source record: 117909
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Maybe you should drop the NIST formerly NBS a line. Their address id given out on the hour by WWV 'on 2.5, 5, 10, 15, and 20 MHZ...' in Colorado. Obviously you listen to WWV if you're interested it precision timekeeping and accurate frequencies...

1069. Re: European Phone Line Specs???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 13:16:32 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qarjg$b44@ohlone.kn.PacBell.COM>
Source record: 117910

Since the europeans took their phone systems from the U.S., the specs are probably the same for POTS (plain old telephone svc.) So the U.S. should apply. The political and regulatory specs differ, though. BTW, this should be posted on comp.dcom.telecom, FWIW.

1070. rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 15:13:24 UTC
From: kenman@iastate.edu
Message-ID: <2qb2ek$5cd@news.iastate.edu>
Source record: 117911

Hello: I'm working on my first homebrew project and need to order a rheostat.

In the catalog I see there are linear taper and audio taper rheostats. What's the diffrence here?

Thanks!

Ken

--
Ken Anderson N0ZEM Kenman@iastate.edu PH: 515.294.8996
126 Soil Tilth Bldg., Iowa State University, Ames, Iowa 50011

1071. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 15:24:40 UTC
From: timg@valinor.mythical.com
Message-ID: <TBZuLc1w165w@valinor.mythical.com>
Source record: 117823
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

darsmith@spk.hp.com (Daryl R. Smith) writes:

> :
> : If you buy the kit from Ramsey Electronics, you'll get part of the
> : regulations.
>
> OK, please post the number or address for Ramsey Electronics. Thanks
>
> Daryl Smith
>
> darsmith@hpspkla.spk.hp.com

Ramsey Electronics, Inc.
793 Canning Parkway
Victor, New York 14564

phone 716-924-4560
fax -4555

Tim Gross
Internet: timg@valinor.mythical.com uucp: uunet!valinor!timg

1072. Making CW with a CB rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 17:37:40 UTC
From: al152511@academ01.mty.itesm.mx
Message-ID: <al152511.768159460@academ01>
Source record: 117913

Hello, homebrewers!

I have had curiosity to know if it is possible to make CW transmitting
with a CB rig quite a time ago, and have received a few advices recently,
but have not put them in practice yet.

That is because normally they suggest me to alter the rig in some manner, and
are not sure if that would work well.

I was looking for an easy way to do this trick.

I recently bougth a MFJ deluxe code practicer, that is an straight key with
an oscilator and speaker, with tone and volumen controls. This thing have a hole to connect
it to an external speaker or earphones.

I was wondering if it is possible to connect this aparatus to the entry of the
microphone in the CB like an earphone, and thus transmitting CW with the key

Muchos thanks in advice if someone can provide information about this.

73 de Ricardo Rodriguez M.

P.S. By the way, I think this would be a very interesting way of practice code
with other CBers, to get a ham license.

.

1073. Re: rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 19:18:26 UTC
From: jlundgr@eis.calstate.edu
Message-ID: <2qbgq2$9rm@eis.calstate.edu>
Source record: 117908

In my line of thinking, a RHEOSTAT is a potentiometer that's over the 1 watt size, usually in the tens of watts. Like the things they used to use for dimming lamps. I didn't know that they even had audio taper rheostats. Tell us more.

--

1074. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 19:23:35 UTC
From: landisj@drager.com
Message-ID: <1994May5.152336.54@drager.com>
Source record: 117830

In article <hamilton.767917015@BIX.com>, hamilton@BIX.com (hamilton on BIX) writes:
...
> My advice is to not to waste your money on something cheap. You only
> get what you pay for. If you're looking for some inexpensive code
> practice, get the ARRL code practice tapes. They _really_ work and
> they're really worth the money.
>
> Don't expect to practice with the W1AW signals (depending on your
> location) until you get a "real" radio.
>
>
> Regards,
> Doug Hamilton KD1UJ hamilton@bix.com Ph 508-358-5715
> Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117, USA

You can get an old Heathkit reciever or transceiver for under $100, and a good one, at that. I got my code up from 5WPM to over 20 by listening to tapes made from W1AW on my old SB303. There was an SB303 posted for sale here recently for $90. This is a great 2nd receiver to have around too. Or you can always sell it for about what you paid for it.

Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co.
landisj@drager.com | uupsi5!main03!landisj | AA3GN @ WB3JOE

1075. Fox Hole Radios

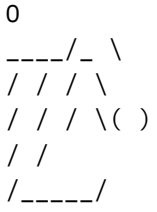
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 22:05:50 UTC
From: cud@chewie.corp.frame.com
Message-ID: <2qbqju$fgs@frame.frame.com>
Source record: 117912

A long time ago, I read a Boy's Life article that
showed how to make a (veritible) chrystal radio
using a safety pin, an eraser, and a razor blade.

I recall the safety pin is rigged to connect the
circut to the razor blade at the pin point. The
eraser is run through by the pin to weigh the point
against the razor blade. You move the pin across the
surface (not the edge) of the razor blade to change
frequency.

My (most uneducated) guess is that the pin bounces
on the blade, so the current can only pass in one
direction. The bounce is related to the signal
frequency (???), so moving the pin around ressonates
differently on the blade. When you get a signal, the pin
bounces in response, so you can hear it in the ear phone.

I guess the antenna attaches to the pin, and the
ground to the blade, with the earphone in between
the ground and the blade?
This is where I get lost. I suppose I could just
try to build one of these suckers! Still, I was
wondering if anybody has heard about this low-tech
wonder, and can offer me advice.



Here is a really bad picture of the pin on the razor blade.
I didn't try to show the eraser. The parentheses are the
head of the safety pin, flattened so the pin can rotate
about a tack that holds it in place.

From somebody who barely knows how to turn on
his car radio...

Thanks cud@frame.com

1076. Re: rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-05 23:12:42 UTC
From: jgrubs@voxbox.norden1.com
Message-ID: <VZkVLc2w165w@voxbox.norden1.com>
Source record: 117914

```
-----BEGIN PGP SIGNED MESSAGE-----

jlundgr@eis.calstate.edu (John E. Lundgren) writes:

> In my line of thinking, a RHEOSTAT is a potentiometer that's over the 1
> watt size, usually in the tens of watts. Like the things they used to
> use for dimming lamps. I didn't know that they even had audio taper
> rheostats. Tell us more.

The resistance is logarithmically proportional to degrees of
rotation from minimum to maximum to match the logarithmic
characteristics of human hearing.

-----BEGIN PGP SIGNATURE-----
Version: 2.3a

iQCVAgUBLcl9wsmzkeX3rfUNAQH/bgP/XijuxZCEvrDI+UOm7a2Cm1SU+KUuF0/j
5S8gbJJ1fzLUhdXkB6ISn9tvrUntMiRlRhwJ13Vwfbw83i1fDZ3ZWTbr3kOJTUyl
Vi+2kWZEp/3eqiwB95kkHqm+Va+275t0NVX7wzXFCsexJ3GLsH+7sSK+Kn/WZJ3j
2zy98GxHlzE=
=arq2
-----END PGP SIGNATURE-----

/-----------------------------------------------------------\
| Jim Grubs, W8GRT Voxbox Enterprises Tel.: 419/882-2697 |
\-+---------------------------------------------------------/
```

1077. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 02:48:00 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994May5.204800.1@ccsvax.sfasu.edu>
Source record: 117915

In article <2pr5d1$l20@watnews1.watson.ibm.com>, vinod@watson.ibm.com (Vinod Narayanan) writes:
<preamble deleted>
.
.
.
> Given the above,
> 1. Can somebody recommend a good, inexpensive kit ? I just
> got the catalog from ten-tec yesterday, they have a a kit
> for $39. This is a new business for them, so I don't expect
> anybody has built this yet, but if they have, I would like
> to hear about it..

If you build the TenTec kit, you'll be following in the footsteps of several generations of hams who started out with homebrew regenerative receivers, you'll learn an incredible amount about electronics, and you'll wind up with a receiver that will certainly be able to receive W1AW (even my bathtub gets them on occasion), although not too useful for two-way communication on the present bands. GO FOR IT!!
>
> 2. Is this kind of project feasible, or am I better off looking
> for a used receiver? (Well, I intend to look at the local hamfests
> anyway, I was just wondering about how feasible the task is in
> general, given that I don't have much test equipment).

See my note above. Although I said that little RX won't be TOO useful for 2-way, I didn't mean it would be useless. You might decide you want next to build a QRP transmitter to go with it, and see what you can do.
>
> Thanks for any comments, advice, references etc. in advance.
> --vinod
> email: vinod@watson.ibm.com

Cheers & 73!
Jim
K5YUT

1078. Help w/ 'RF Design' Magazine article 1/88 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 03:37:22 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94May5233722@splinter.coe.neu.edu>
Source record: 117916

Hi:
I'm posting this for a friend.
-Dean

from Thomas:

Hi:
Does anyone read RF Design? I'm looking for an article entitled 'Simple
Spectrum Analyzer, A Pocket Sized 0-100 Mhz Unit Uses Only Three IC's'
by A. Halfrick. I believe it's in the Jan. 88 issue. If so, could I please
have a copy or an adress to retrieve that issue? Thanks in advance.

-Thomas

1079. Re: Fox Hole Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 06:41:48 UTC
From: MSUORANTA@FINABO.ABO.FI
Message-ID: <1994May6.064148.22235@abo.fi>
Source record: 117917

In <2qbqju$fgs@frame.frame.com> cud@chewie.corp.frame.com writes:

> A long time ago, I read a Boy's Life article that
> showed how to make a (veritible) chrystal radio
> using a safety pin, an eraser, and a razor blade.
>
> I recall the safety pin is rigged to connect the
> circut to the razor blade at the pin point. The
> eraser is run through by the pin to weigh the point
> against the razor blade. You move the pin across the
> surface (not the edge) of the razor blade to change
> frequency.
>
> My (most uneducated) guess is that the pin bounces
> on the blade, so the current can only pass in one
> direction. The bounce is related to the signal
> frequency (???), so moving the pin around ressonates
> differently on the blade. When you get a signal, the pin
> bounces in response, so you can hear it in the ear phone.
>
> I guess the antenna attaches to the pin, and the
> ground to the blade, with the earphone in between
> the ground and the blade?
> This is where I get lost. I suppose I could just
> try to build one of these suckers! Still, I was
> wondering if anybody has heard about this low-tech
> wonder, and can offer me advice.

See "Handbook of Radio Communications", don't remember the
author, but that book was published around 1985..86 by TAB Books.

Blade is used as a diode, not a frequency control device. Pin is
moved around the surface of the blade in order to find a good
spot where it acts as a diode.

Frequency control is done by an LC-circut at the antenna end of
foxhole radio.

```
l
l
l antenna
l
l
l razor blade -diode
l
```

```
l _____________________-->l_____________________________
coi Z l l l
Z === l l (high-Z)
Z l capacitor l capacitor ) head-
Z___l (or another coil in === ) phones
l simple construction) l )
l l l
l ground l l
```

73 Mika OH1NZQ

Mika Suoranta, E-mail MIKA.SUORANTA@ABO.FI, Packet OH1NZQ@OH1RBU.FIN.EU

1080. Wanted : Cheap, available varacter diode source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 06:44:23 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94May6024423@splinter.coe.neu.edu>
Source record: 117818

Hi:
I'd like to begin experimenting w/ varacter diodes. Can anyone
recommend an inexpensive, readily available, easy to work w/
device? Where can I get a few to play with?

-Dean

1081. Re: Fox Hole Radios

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 07:07:50 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qcqc6$glc@ohlone.kn.PacBell.COM>
Source record: 117819

The razor should be one of the 'blue steel' types. The coating or whatever makes it blue also is a different substance than the pin tip, and the two make a junction that rectifies the signal. The same thing as a galena crystal radio. You didn't include any tuned circuit, so this receiver will pick up any and all of the AM stations. Just remember that the strength of the signal is proportional to the length of the antenna.

1082. Re: Wanted : Cheap, available varacter diode source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 07:12:45 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qcqld$glc@ohlone.kn.PacBell.COM>
Source record: 117820

Dean Gelabert (dean@splinter.coe.neu.edu) wrote:
:
: Hi:
: I'd like to begin experimenting w/ varacter diodes. Can anyone
: recommend an inexpensive, readily available, easy to work w/
: device? Where can I get a few to play with?
:
: -Dean

If you go to the local Radio Shaft and buy some regular 1N4002
rectifiers, and use them instead, they will exhibit the same varactor
characteristics as the real thing, except it will not be linear as the
real thing. And of course, the amount of capacitance is dependent on the
junction size, so a higher power diode will have a higher capacitance.
Best of success.

1083. Re: rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 07:26:09 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qcreh$glc@ohlone.kn.PacBell.COM>
Source record: 117821

EH? I know that the audio taper has about 3/4 of the resistance in half of the rotation. And the logarithmic stuff. I guess I should have made my question clearer.

If a rheostat is a power potentiometer, then it is usually made using wire, like a wirewound resistor. AAnd the wire is heavy enough that the wiper arm can't wear it out, or tear it up.

Now how does one wind wire in an audio taper? At one end of the pot, the wire would be bunched up, and at the other end it would be spaced apart that the wiper arm would have to be extra wide, so it wouldn't lose contact. And at one end, the power dissipation would be excessive, since that's where all the resistance is.

Sounds like a rheostat might be a bit more expensive to make than the everyday pot.

1084. Re: Making CW with a CB rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 07:33:44 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qcrso$glc@ohlone.kn.PacBell.COM>
Source record: 117822

Here in U.S.A, or E. U., it's against the law to send code over the CB. I don't know what the laws of Mexico would say. All you have to do is find the two wires in the microphone that go to the push button switch. When the two wires are shorted, then the CB set puts out power. Run those two wires to your Key. There should be no microphone on it.

The problem is in the reception. How will you be able to hear it? The CB sets do not have a BFO, or Beat Frequency Oscillator, like Ham Radios do. You will have to make up one for your receiver.

Buena Suerte.

1085. Re: rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 15:04:56 UTC
From: tomb@lsid.hp.com
Message-ID: <CpDz88.5J4@hpcvsnz.cv.hp.com>
Source record: 117824

John Lundgren (jlundgre@kn.pacbell.com) wrote:
: I guess I should have made my question clearer.

Yep.

: Now how does one wind wire in an audio taper? At one end of the pot, the

Linear wirewound pots/rheostats can be made by winding the wire on a rectangle of thin insulating material--say .1cm x 1cm x 10cm, with the wire running across the 1cm direction. That element is then formed into a circle, and a wiper wipes along the .1cm face. If you do the same thing but make the form a triangle, or put some other taper on it, then you get a nonlinear resistance change with distance. This is _one_ way of doing it.

1086. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 16:46:18 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.768242778@melpar>
Source record: 117826

wa2ise@netcom.com (Robert Casey) writes:

>My father used a wooden pole to mount a vertical yagi, but I pointed
>out "what about the coax running up the wooden pole to get the radio
>connected to the antenna?". He figured that, yes, it will have some
>effect, but the coax being smaller than a metal mast, would not be
>as bad. Don't really know. Would it help if we used ferrite beads

This problem has occurred to me as well. Your father is probably
correct about the effect being less than that of a metal mast; but
I think that if optimum performance was my goal, I'd run the coax
along the boom to the reflector, then tape it to the back of the lower
half of the reflector and let angle away from the antenna downward to
the mast. Not a nice, clean installation, to be sure, but probably
minimizes the effect. The alternative is the counterbalanced
horizontal boom idea suggested by someone else, but if I were going
to do that my "counterbalance" would be another antenna so I could
pick up the extra 3 dB gain.

Paul H. Bock, Jr. K4MSG

1087. Returned mail: User unknown (fwd)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 19:48:25 UTC
From: kaul@netcom.COM
Message-ID: <Pine.3.89.9405061216.A4988-0100000@netcom8>
Source record: 117825

oops / got it right the second time !!!

[<Alan Kaul, W6RCL>] kaul@netcom.com

---------- Forwarded message ----------
Date: Fri, 6 May 1994 10:27:06 -0700
From: Mail Delivery Subsystem <Mailer-Daemon@netcom.com>
To: kaul@netcom.com
Subject: Returned mail: User unknown

The original message was received at Fri, 6 May 1994 10:12:44 -0700
from kaul@localhost

----- The following addresses had delivery problems -----
ham-homebrew@ucsb.edu (unrecoverable error)

----- Transcript of session follows -----
... while talking to ucsb.edu.:
>>> RCPT To:<ham-homebrew@ucsb.edu>
<<< 550 <ham-homebrew@ucsb.edu>... User unknown
550 ham-homebrew@ucsb.edu... User unknown

----- Original message follows -----
Return-Path: <kaul>
Received: by netcom.com (8.6.8.1/SMI-4.1/Netcom)
id KAA10136; Fri, 6 May 1994 10:12:44 -0700
Date: Fri, 6 May 1994 10:12:43 -0700 (PDT)
From: Alan Kaul <kaul@netcom.com>
Subject: Re: ALC Adjustments to enable QRP (fwd)
To: ham-homebrew@ucsb.edu
Message-ID: <Pine.3.89.9405061013.A8417-0100000@netcom6>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

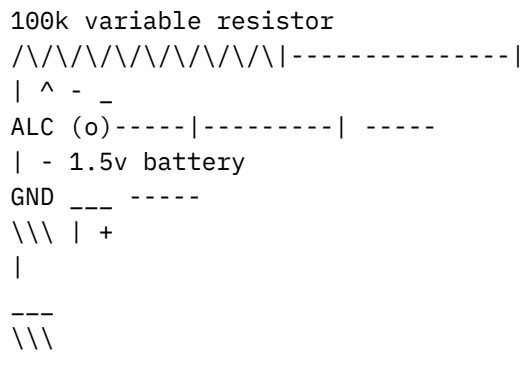
Dear Ham-Homebrew:
I don't know if this circuit would be of any interest to your readers
but it seems to be a quick way to put some of the QRO transceivers on to
QRP with power levels ranging from 5-watts down to milliwatt levels. If
you think it is worth passing on to your readers, please do!
Tnx and 72, 73 de alan

[<Alan Kaul, W6RCL>] kaul@netcom.com

(the following was distributed to QRP@Think.com on 6 May 94)

ICOM published the circuit in an ad in QST (Tech Talk# 84, QST,
Dec. 1992, Page 184) and claimed it will work for all Icom transceivers

(although I think some of the old tube types might require positive
instead of negative ALC voltage). The circuit is as follows:



Icom claims: -1.25v = 5w output
-1.30v = 300 milliwatts
-1.33v = 100 milliwatts

73, 72 de alan

[<Alan Kaul, W6RCL>] kaul@netcom.com

1088. Re: rheostats

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 21:16:32 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2qec3g$sio@tekadm1.cse.tek.com>
Source record: 117827

To: jlundgr@eis.calstate.edu (John E. Lundgren):

>In my line of thinking, a RHEOSTAT is a potentiometer that's over the 1
>watt size, usually in the tens of watts. Like the things they used to
>use for dimming lamps. I didn't know that they even had audio taper
>rheostats. Tell us more.

Common usage in electronics is that a rheostat is a two-terminal
variable resistor; a poentiometer can be connected as a rheostat
by shorting the tap with one of the ends or by leaving one of the
ends disconnected.

Roy Lewallen, W7EL
roy.lewallen@tek.com

1089. Re: SUMMARY: Texas Instruments Speech Chip Uses

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-06 23:05:25 UTC
From: ren@rap.ucar.edu
Message-ID: <2qeifl$18o@ncar.ucar.edu>
Source record: 117828

This is a follow-up to my SUMMARY posting made a couple
weeks ago.
Several kind individuals responded to my (null)
summary with positive (what to you expect with electronics folks B*)
(Bad Pun! Sit Down!) feedback.
A mid-80's Popular Electronics article discussed hacking
the "Speak & [verb]" toys. One of the respondents has offered to
photocopy the article (once I get around to sending him a SASE)
(and once he gets back from his honeymoon)
(Thanks Mark!)
To give them recognition due, Thanks to,

ed@fore.com (Ed Bathgate)
trier@ins.cwru.edu (Stephen C. Trier)
mark@era.com (Mark Feit)

ren N0PVI
dona nobis pacem

1090. MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-07 04:16:27 UTC
From: dws30@p1dbg02cd.amdahl.com
Message-ID: <1994May7.041627.4155@ccc.amdahl.com>
Source record: 117829

Subject says it all for the most part. Toying with the idea of building
a QRP Amp out of MOSFETS. Any schematics or pointers to information
would be greatly appriciated. Want to build one for VHF/UHF and HF when
I tackle the code and are up to speed. (Beginner = Low Wattage)

--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com

1091. Wanted : info and/or tutorial on the use of varactor diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-07 07:58:45 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94May7035845@splinter.coe.neu.edu>
Source record: 117831

Hi:
Is there an ftp site or magazine where I could get a tutorial on the
use of Varactor Diodes? Anyone?

-Dean

1092. Re: Vertical yagi mounting

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-07 15:27:45 UTC
From: jmvasnie@cen.ex.ac.uk
Message-ID: <CpFuyA.K@cen.ex.ac.uk>
Source record: 117832

boyer@rd.eng.bbc.co.uk writes:
> William P. Osborne (wosborne@nmsu.edu) wrote:
> : On Thu, 28 Apr 1994 20:55:12 GMT,
> : Paul H. Bock <phb@syseng1.melpar.esys.com> wrote:
>
> : > In a recent on-the-air discussion, I pointed out the error
> : >of mounting a two-meter yagi in the vertically-polarized
> : >position while using a metal mast (assuming that the antenna
> : >mounts from the center of the boom and not at one end, the
> : >latter being common for 3- and 4-element yagis).
> : Paul: This is an excellent problem for testing with the newer versions of
> : MIninec or NEC on the market. I have done a good bit of modeling of
> : stacked and interlaced 10/15/20 meter yagis and can confirm that a 20 meter
> : element in the middle of a 15 meter yagi is bad news in that it can cost
> : you 1 to 1.5 dB of gain, change the input Z some and cause most anything to
> : happen to the front to back. I have not tried a random length mast but I
> : would expect the same sort of results. 73 Bill
>
>
> I did a little modelling with NEC. I first constructed a rough 4 ele yagi
> and got a resonable pattern. Then I added a long vertical pole roughly in the
> center of the yagi. This really buggered the pattern. Ok so I did this at
> Band II where I have a good idea of the size of things off the top of my
> head, but it still applies to 2m. Here is my NEC input file.
>
> CM vertical Yagi
> CM
> CM
> CE
> GW1,25,0.,0.,-.9,-.,0.,.9,.01,
> GW2,25,.76,0.,-.76,.76,0.,.76,.01,
> GW3,25,1.3,0.,-.6,1.3,0.,.6,.01,
> GW4,10,1.9,0.,-.6,1.9,0.,.6,.01,
> GW5,25,1.,0.,-2.65,1.,0.,.35,.03,
> GE0,0,0.,
> EX0,2,13,00,1.,0.,
> FR0,1,0,0,96.,0.,0.,
> RP0,1,359,1010,90.,0.,0.,1.,0.,0.,
> EN
>
>
> So I guess the answer is don't use a metal pole with a vetical yagi.
>
>

> John B
>
> John.boyer@rd.eng.bbc.co.uk
>
>

1093. RC motor control

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-07 22:10:54 UTC
From: mlankhei@mercury.sfsu.edu
Message-ID: <2qh3le$br7@news.csus.edu>
Source record: 117833

Hi all,

I am interested in using servo motors of the type used in model airplanes for general radio control applications. These motors rotate through an angle theta which is linearly proportional to a pulse modulated control voltage. There is a standard method of multiplexing several such data channels into a repeated pulse waveform to control several motors. The commercial systems operate in the 75MHz unlicensed RC band, but I'd like to be able to operate at other frequencies. If anybody knows anything about these servo motors, including cheap sources, please let me know. Also, if anyone knows of some good books on the subject, I'd appreciated the tip! I know there are hams out there who are into RC and operate their models in the 6 meter band, so if thats you, let me know how to get started !!! Thanks for any help.

Michael
mlankhei@sfsu.edu

1094. Re: RTTY with regular modem?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 01:31:53 UTC
From: copeland@metronet.com
Message-ID: <CpGMx5.JnD@metronet.com>
Source record: 117834
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <mgalatz.1118627256E@198.7.0.1>,
Menachem Galatz DC <mgalatz@panix.com> wrote:
>Is there a way to read RTTY with a regular phone modem?

I know UARTS (8250,16550) both support 5 bit ASCII (baudot), but
don't know what modulation technique RTTY uses.

Can this be done?
--

| copeland@metronet.com |

1095. Build Hi-Pwr SS Linear

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 02:52:52 UTC
From: gene@eagle.csl.uiuc.edu
Message-ID: <gene.768365572@eagle.csl.uiuc.edu>
Source record: 117835

A month or two ago I suggested the possibility of home-brewing your own low-
cost High-Power Solid-state Linear on the 160-80-40 meter bands. I will report
my progress.
I will insert here, my opinion that I think this computer-networking system
is a very valuable NATIONAL RESOURCE that provides almost limitless possibili-
ties for fostering the massive, untapped creative talents of the thousands of
readers using the system.
First, I will state some of the intitial factors that I thought were attract-ive:
1. Low-cost 400v-2.5A MosFets are available for < $2 ea.
2. Full-wave rectifiying your household 230v line yields massive power
capabilites (with 10,000 ufd-200v capacitors, mine only dropped about
5% [169v to 161v] for load-current change from 1/2A to 7.5A).
3. The household "neutral becomes the circuit common"...but still remains
isolated from the case (and earth ground) by isolated pri-sec windings
on both the input transformer(from the transceiver), and the output tank
coil (to the 50 ohm antenna).
4. Since the majority of amateurs own 100 watt transceivers, you are given
the luxury of wasting drive-power to accommodate very low-ohm swamping
resistors across the inputs to the high-capacitance MosFet inputs (I
used 12-ohm, 2W carbon from each half of the Push-pull circuit to RF
ground...i.e. the forward bias line.
5. Again, because of surplus drive-power available, I used 24-ohm, 4W in
series with each end of the input transformer secondary(a 1:1 50 ohm
broad-bander, wound on a toroid), to each gate-group. Actually, the
24 ohms were two 47 ohm-2w carbon. This makes the input impedance
almost a pure 50 ohm, and makes your transceiver very happy. It also
provides a modicom of isolation against possible transients being sent
back to your transceiver when you blow your first Mosfets....yes, you
are likely to have this happen during experimentation, unless you are v

ery careful, or very lucky! With 165v stored in 10,000 uf, the MosFets
literally explode like a fire-cracker (Thankfully, my eight IRF-722's
only cost $1.50 each...yes they all go at once...but the next type I
want to experiment with will cost $1.22 ea, and I hope will go higher
in frequency.
Since this is getting quite lengthy, I will try to give a general description
of my circuit:
First let me admit that I went into this quite naiively (sp) and had several
nasty surprises, but the bottom line is that I have been on the air with a
good-quality signal providing 600W PEP out on 160 meters, and 500W PEP out on
80 meters. That's not to say that I couldn't get a little more than that,
but after a few "4th-of-July firecrackers", you get a little "gun-shy".
First, I limit my power-up surge current by using a 50- ohm, 20w resistor
in series with the rectiers and the 10,000 uf. After a second or two this gets

shorted out with relay contacts (A thermistor is not suitable here, because in SSB service, the quiescent power does not get it hot enough). Not meaning to confuse the issue, but I had used a relay with two contacts in parallel and I noticed that one closed a little ahead of the other and was getting considerable abuse, because even though the 10,000 uf gets about half-charged before the relay closes, the remaining surge-current ocurring for continuing to full charge is still large (house-lites blink slightly)..so used the first contact to short the 50-ohm, but used an additional 6-ohm which the second contact shorts out a few milliseconds later.

This is worthwhile, because so many times when one participates in a large group of amateurs, he may not contribute more that 3 or 4 minutes of talk over a 3 or 4 hour period, except to station-identify every 10 minutes. I like to power-up briefly to identify, and then turn off the linear for another 10 minutes!

I use eight IRF-722's (these happen to be by Harris) in parallel-pushpull. Each of the individual eight have a ferrite-bead and an 18-ohm, 1/4w resistor immediatley at the gate (bead slides over Fet-pin). Also, each individual source has a 2-ohm source resistor (two 3.9-ohm, 1w-carbon in parallel) , attached immediately at the Fet's source pin. For circuit common, or perhaps you could refer to it as circuit-ground, I route a #12 copper bus to within reach of the ground-end of the source resistors.

The outboard end of the 18-ohm gate resistors, are grouped...four in common for 1/2 of the Push-Pull arrangement, and the other four in the other half. These junctions then have a 12-ohm 2w carbon from each of them to a common forward bias line from a zener-regulated +5 source...with a 200 ohm pot to provide 0 to +5 to the midpoint of the two 12-ohm resistors, and I also tie the center-tap of the secondary of the broad-band input transformer to this point. I can happily report that I never saw any evidence of instability or parasitic oscillations!

My first approach used a broad-band ferrite transformer in the drain-to-drain out-put circuit. Unfortunately, there were severe glitches and wave-form distortions that were supported by this broad-band transformer...it remained the same at low power levels so am quite certain there was no core saturation etc. Actually you may find many little surprises when dealing with these low-cost high inp-capacitance MosFets....some strange phenomenon concerning "cell-to-cell propagation in the gate-capacitance" which I don't understand. I do know that when I tried a source-follower configuration using a broad-band load, I observed a myriad of clean, sharp, high-amplitude narrow pulses superimposed on the basic sine-wave!

I`m straying off the main topic....anyway, to continue, I found that my original idea of using a broad, resonant LC circuit in the output worked beautifully on 160 meters! It may be hard to think in such low-impedance terms for those used to Vacuum-tube designs, but the principles remain the same; I estimate my drain-to-drain impedance to be approximately 80 ohms. On 160 meters, my inductor was a 3 turn, 4" dia. made of 1/4" copper tubing. Each end of this had a heavy-duty type .012 uf mica capacitor from each end to common-circuit-ground. I believe the Q is approx 7 to 10... broad enough to cover 1.8-2.0 MHz. The output secondary is simply a wire with good-quality insulation, threaded thru the copper tubing and connected directly to the output coax connector....which is case ground (earth ground)

Incidentally, the earth-ground (green-wire) of the household power also connects to the case. Parenthetically, I didn't take time to run a conventional 230 connector to mine...I simply used two 3-wire 120 power cords plugged into two different outlets in the room which had opposite phase (be sure to verify correct phase and use only polarized 3-wire plugs).
The distortion was purified beautifully by the resonant LC circuit on 160 meters. Unfortunately, using similar Xc (Q) on 80 meters did not clean up the wave form to an acceptable degree. I first added a 5-element Chebychev 50-ohm filter from the ARRL Handbook. It still was not quite clean enough, but when went to 7-element (4 inductors, 3 capacitors) it cleaned up nicely. I used a small size coffee-can (with its cut-out bottom-piece tack-soldered in the center for the middle capacitor and two middle inductors, then added same-diam smaller- height cans for the outside ends (Peanut cans??)...this provides shielding between air-wound inductors. `Didn't bother covering outside ends. I had tried a smaller ferrite toroid from the junk box, but they got very hot at 600w and probably saturating.
On 80 meters, about 40 watts of drive was required to drive the linear to 500w PEP out. Of course most of this is arbitrarily wasted, and it`s quite likely that it could be successfully driven with much less...probably with the smaller-power transceivers with plug-in modules now offered by TenTec for around $500...called the Scout, I believe.
One more construction feature worth mentioning....the four MosFet drain-tabs in each group are mounted directly on one of the two large heatsinks. Of course the heat-sink itself must be insulated for at least 350 volts, but stray capacitance is of no concern at these low-impedance, lower frequencies (witness the .012 uf from each heat-sink to ground).
I do use a small muffin blower fan and that's always desireable, but mine run so modestly warm that I'm not sure it's an absolute necessity if one avoids long "key-down" carrier. MosFets seem to operate with amazingly low quiescent current requirement to eliminate cross-over distortion!
I apologize for such a lengthy posting... I hope there's enough general interest to justify it. I hope many will "put their toe in the water" and post any new observations of interest to the net. I have learned quite a bit (albeit the hard way) and plan to soon experiment with a further idea: There are probably better MosFet options that I'm not aware of with my rather isolated environment, but one that I'm interested in is the Motorola MTP-1N60. It is a 600v-1A, that appears to have switching characteristics considerably faster. It's drain-to-drain impedance would probably be about 4 times as high, which would be more practical for the LC output resonant tanks, with a convenient 4:1 stepdown broad-balun to match the 50 ohm antenna. The 240v line (120-0-120) would need to be negative-rectified also to provide 320vdc. Of course, the "circuit-common" would now be down at the -160v level, but don't believe this would be a problem because of the isolation provided by the input and output scheme as mentioned above.
It is my belief (naiive tho it may be) that the higher-speed switching characteristics do not get compromised, even though many MosFets are connected in parallel; only the drive requirements must be dealt with, but again, with much reserve power from the transceiver, and with the higher-speed transistors having lower input capacitances, I think it is quite

practical to consider using as many as 10 or 12 to easily get 1Kw PEP out. With my experience-to-date, it appears that as long as you put the individual ferrite-bead and lo-ohm resister at each gate, stability is maintained. Also, Mosfets on the same heatsink, have the fortunate feature of heat-shifting if they get much disparity. Even though the "quiescent" isn't quite as fortunate, with many in parallel...and with the remarkabley-low quiescent current requirement....my meager experience so far seems to be that it's no problem even when all are biased off a common bias-line.
One more last thought as long as I've gone this long....I plan to put a simple SWR bridge in the output line, so that if the SWR gets to an unacceptable level, it will cause a transistor on the forward-bias line to conduct and kill the forward-bias (this is 3.5 volts in my case).
Unlike vacuum-tubes, MosFets are rather unforgiving and after a few milliseconds, it's too late. Which reminds, I didn't mention above that I put a pair of back-to-back zeners from each gate-group, to circuit-ground (total of 4 15-v zeners). Even though this includes the drop across the emitter-resistor, it's still within the bounds (+ or - gate to source breakdown voltage-limit). ......Finally, the END!
--

Internet, BITNET: gene@csl.uiuc.edu

1096. EEPROM info ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 03:42:00 UTC
From: Tony.Ingargiola@f302.n268.z1.fidonet.org
Message-ID: <768421883.AA02026@rochgte.fidonet.org>
Source record: 117841

Does anyone have any info on a pin - output schematic for EEPROM (93C46) such as Noika, Hitachi, or other brands. Please E-Mail me faster at my America Online address tonyingy@aol.com
Thank-A-You

1097. Re: RC motor control

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 06:53:18 UTC
From: nagle@netcom.com
Message-ID: <nagleCpH1su.Is7@netcom.com>
Source record: 117836

Look in comp.robotics, where this subject is regularly discussed.

John Nagle

1098. DC-100 Mhz VCO Chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 07:48:19 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94May8034820@splinter.coe.neu.edu>
Source record: 117837

Hi:
Does anyone know if there is such a thing as an inexpensive DC-100Mhz
vco chip out there?

-Dean

1099. diode ring detector with smd's?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 14:37:02 UTC
From: jimn0oct@aol.com
Message-ID: <2qitee$42k@search01.news.aol.com>
Source record: 117838

Has anyone experimented with the surface mount HP-2800 hot carrier diodes as diode ring detectors for DC receivers?? I'm curious to know if they will give similar performance to regular HP-2800's? I need a _SMALL_ package for a receiver I'm building, and these would be perfect.

Thanks for any replies!

72/73, Jim N0OCT

jimn0oct@aol.com

1100. Re: DC-100 Mhz VCO Chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 14:50:07 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qiu6v$3v2@ohlone.kn.PacBell.COM>
Source record: 117839

Dean Gelabert (dean@splinter.coe.neu.edu) wrote:
: Hi:
: Does anyone know if there is such a thing as an inexpensive DC-100Mhz
: vco chip out there?

: -Dean

Well, if it's at DC, then it's called a power supply. If it is at 100MHz, then it's called a transmitter. You probably won't find a device that will go much more than 1 or 2 decades, for a reasonable price.

The voltage at 100MHz, let's say, it 100 volts. At 100KHz, it would be a tenth of a volt. What would it be at DC? Microvolts? This device you want would have to be lon-linear to meet those requirements.

--
@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@@

1101. Re: RTTY with regular modem?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 14:57:10 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2qiuk6$3v2@ohlone.kn.PacBell.COM>
Source record: 117840
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

No. RTTY is narrow band FSK. Modems don't do that narrow a band,
but use as much of the the full 300 to 3700 Hz bandwidth as they can.
They actually put out an audio carrier. What you want to do is shift
your RF carrier with the RTTY signal. So the RTTY pulses would be fed
into the transmitter oscillator or VCO. If you have an RTTY, it probably
puts out current loop, and most modems don't handle current loop.

--
@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@@

1102. Re: DC-100 Mhz VCO Chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-08 19:10:13 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2qjdel$n7e@nntp2.Stanford.EDU>
Source record: 117842

In article <DEAN.94May8034820@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:
>Hi:
> Does anyone know if there is such a thing as an inexpensive DC-100Mhz
>vco chip out there?
>
>-Dean

The closest chip I can think of is the Motorola MC1648 (I think thats the right number). You can make a reasonably good varactor tuned VCO out of it. DC to 100 MHz would not be practical for a single oscillator though.

Generally, that kind of tuning range can be had by mixing
two UHF oscillators together and taking the difference between the two.
One oscillator would be fixed, say at 500MHz, the other would be tuneable from 500 to 600MHz. This allows wide tuning range and good linearity.

Hope that helps

Steve Muther WF6R stevem@w6yx.stanford.edu

1103. Metal-Encased Mica Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 08:03:19 UTC
From: dbraun@ilx049.iil.intel.com
Message-ID: <2qkqo7INNm7l@ilx018.iil.intel.com>
Source record: 117843

A HT Amp I bought (RF Concepts) uses these funny capacitors in the RF circuits. They look like a collection of bits of mica and other stuff, clamped in a little metal frame. They are between 1/4" and 1/2" on a side. I also just got a "Surplus Sales of Nebraska" flyer, which lists some of them for sale.

I was wondering: what is the advantage of this type of device? They look sort of crude, with an open construction that could let solder, moisture, etc. get in and mess them up.

Doug Braun Intel Israel, Ltd. M/S: IDC-42 (new mailstop!)
Tel: 011-972-4-655069 dbraun@inside.intel.com

"Partly as a reaction against the increasingly grubby image of punk and partly because of Paul Weller of The Jam's enthusiasm for sharp 60's beat styles, 1979 wittnessed a mod revival. Largely local to London, this consisted principally of swarms of aggressive young mods parading down Caranaby Street (once the home of 60's fashion but now a tourist trap) wearing period parkas decorated with mod insignia, looking for trouble."

1104. Re: diode ring detector with smd's?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 12:24:05 UTC
From: zlau@arrl.org
Message-ID: <1994May9.122405.17959@arrl.org>
Source record: 117844

JimN0OCT (jimn0oct@aol.com) wrote:
: Has anyone experimented with the surface mount HP-2800 hot carrier diodes as
: diode ring detectors for DC receivers?? I'm curious to know if they will give
: similar performance to regular HP-2800's? I need a _SMALL_ package for a
: receiver I'm building, and these would be perfect.

The popular Mini-Circuits SBL-1 uses a little surface mount mixer ring
in its mixers. Usually, surface mount devices work better than leaded
devices in terms of switching speed, though you sometimes lose a bit
in the power handling capability.

Supposedly, the best diodes to use in DC receivers are those optimized
for low 1/f noise. I think mesh diodes were designed for this purpose.
Otherwise, the mixer may be noisier than you might expect from the
conversion loss.

If you buy diode pairs or quads, make sure they are hooked up the way
you want them to.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1105. Re: Newbie code Practice receiver -- feasible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 13:43:46 UTC
From: hamilton@BIX.com
Message-ID: <hamilton.768491026@BIX.com>
Source record: 117845

landisj@drager.com (Joe Landis - System & Network Mgr) writes:

>In article <hamilton.767917015@BIX.com>, hamilton@BIX.com (hamilton on BIX) writes:
>> My advice is to not to waste your money on something cheap. You only
>> get what you pay for. If you're looking for some inexpensive code
>> practice, get the ARRL code practice tapes. They _really_ work and
>> they're really worth the money.
>>
>> Don't expect to practice with the W1AW signals (depending on your
>> location) until you get a "real" radio.

>You can get an old Heathkit reciever or transceiver for under $100, and a good
>one, at that. I got my code up from 5WPM to over 20 by listening to tapes made
>from W1AW on my old SB303. There was an SB303 posted for sale here recently for
>$90. This is a great 2nd receiver to have around too. Or you can always sell
>it for about what you paid for it.

>Joe - AA3GN

Just to clarify: I agree with Joe's remarks. An older radio that's
inexpensive merely because it's used and perhaps lacks all the fancy
digital features, etc., but is otherwise servicable meets my definition
as "real". My suggestion that one should not buy something cheap was
in the context of discussion of one of those $30 kits designed solely
for listening to W1AW.

Regards,
Doug Hamilton KD1UJ hamilton@bix.com Ph 508-358-5715
Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117, USA

1106. Re: Help w/ 'RF Design' Magazine article 1/88 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 14:33:14 UTC
From: jfw@ksr.com
Message-ID: <2qlhja$8fj@hopscotch.ksr.com>
Source record: 117846

dean@splinter.coe.neu.edu (Dean Gelabert) writes:
> Hi:
> Does anyone read RF Design? I'm looking for an article entitled 'Simple
> Spectrum Analyzer, A Pocket Sized 0-100 Mhz Unit Uses Only Three IC's'
> by A. Halfrick. I believe it's in the Jan. 88 issue. If so, could I please
> have a copy or an adress to retrieve that issue? Thanks in advance.
> -Thomas

You can get photocopies of articles from RF Design itself; they don't have actual back issues that old (I actually called about that one a couple of years ago, but couldn't remember the article name! Now I can finally get it :-). I'll look up the phone number tonight (my RF Design pile is at home). (Actually, I seem to recall that it's the February issue, but I'll find out.)

1107. Re: Making CW with a CB rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 15:01:29 UTC
From: sbut-is@seatimes.com
Message-ID: <2qlj89$4hm@seatimes.seatimes.com>
Source record: 117847

: The problem is in the reception. How will you be able to hear it? The
: CB sets do not have a BFO, or Beat Frequency Oscillator, like Ham Radios
: do. You will have to make up one for your receiver.

The CB sets with SSB will work just fine. You know, those sets that
advertise 120 channels! ;-)

1108. LED Replacement - FT5200

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 16:47:55 UTC
From: A3.GAP@ISUMVS.IASTATE.EDU
Message-ID: <2qlpg6$67i@news.iastate.edu>
Source record: 117848

Hi,

I have a YAESU FT-5200 that has one of the LED's burned out. Is
it possible to replace or does it need to go back to YAESU? Has
anyone done this job themselves?

Thanks
--

____
Glenn Pearston (515) 294-0032 v
24 Horticulture Hall (515) 294-0730 f
Ames, IA 50011
pearston@iastate.edu
--

____
Glenn Pearston (515) 294-0032 v
24 Horticulture Hall (515) 294-0730 f
Ames, IA 50011
pearston@iastate.edu

1109. Re: Metal-Encased Mica Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 18:53:45 UTC
From: alanb@sr.hp.com
Message-ID: <CpJttM.KJ2@srgenprp.sr.hp.com>
Source record: 117849

Doug Braun (dbraun@ilx049.iil.intel.com) wrote:
: A HT Amp I bought (RF Concepts) uses these funny capacitors in
: the RF circuits. They look like a collection of bits of mica and other
: stuff, clamped in a little metal frame. They are between 1/4" and 1/2"
: on a side. I also just got a "Surplus Sales of Nebraska" flyer, which
: lists some of them for sale.

: I was wondering: what is the advantage of this type of device?
: They look sort of crude, with an open construction that could
: let solder, moisture, etc. get in and mess them up.

High Q, low inductance and low cost.

AL N1AL

1110. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 19:08:28 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2qm1nc$rvk@abyss.West.Sun.COM>
Source record: 117850

In article 4155@ccc.amdahl.com, dws30@p1dbg02cd.amdahl.com (David Sharpe) writes:
>Subject says it all for the most part. Toying with the idea of building
>a QRP Amp out of MOSFETS. Any schematics or pointers to information
>would be greatly appriciated. Want to build one for VHF/UHF and HF when
>I tackle the code and are up to speed. (Beginner = Low Wattage)

For VHF/UHF, meaning above 6m, you'd probably need 'real' power RF MOSFETs,
such as the MRF171, etc. These are fairly pricey, but offer high gain and
a lot of power, but they are fairly easy to fry. I'd suggest getting your
feet wet with the less expensive bipolar transistors, such as the 2N5590,
or MRF1946. These are more rugged and would make a better beginner project.

For HF and VHF-low (meaning 6m), you can probably get really good results
with conventional switching FETs. The IRF510 (or IRF511) is easily available,
cheap, and offers good performance to 60MHz. You can expect between 5-20W
output, depending on frequency and circuit design. There have been articles
in QST and other mags, also, look for Doug DeMaw's QRP Notebook at a ham
store. I've had an MTP3055E deliver 40W of RF at 14Mhz with about 500mW of
drive. Good stuff, but don't go for max power if you want the part to last :=).
On the other hand, replacements are about $1, so what the heck?

73
Dana

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1111. Need Help with homebrew repeater design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 19:11:23 UTC
From: paul@tc.fluke.COM
Message-ID: <CpJun3.1pE@tc.fluke.COM>
Source record: 117852

I'm interested in putting together a simple temporary repeater using two back-to-back transceivers. I would rather not have to tinker with the circuitry inside the radios, so I want a circuit that can detect whether the squelch is open or closed from outside the radio.

One scheme I've seen for doing this takes the discriminator output on the microphone jack and runs it through a high-pass filter. Apparently an FM discriminator which is not receiving a carrier emits some very high frequency audio and the idea is to detect this "hiss" and use it to determine the state of the squelch.

I have a discrete design for this that I could copy, but I'm wondering if there are any ICs out there that might perform this function for me. It seems like something that might be used in the cellular or commercial radio world.

Anyway, if you know of such a device or have any suggestions of other non-invasive techniques that might work, please pass the info along via email. Thanks in advance.

Paul,
KE7XT
--
Paul Lutt
Domain: paul@tc.fluke.COM
Voice: +1 206 356 5059
UUCP: uunet!fluke!paul
Snail: Fluke Corporation / P.O. Box 9090 / Everett, WA 98206-9090

1112. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-09 20:02:39 UTC
From: tgm@netcom.com
Message-ID: <tgmCpJx0F.6nF@netcom.com>
Source record: 117851

David Sharpe (dws30@p1dbg02cd.amdahl.com) wrote:
: Subject says it all for the most part. Toying with the idea of building
: a QRP Amp out of MOSFETS. Any schematics or pointers to information
: would be greatly appreciated. Want to build one for VHF/UHF and HF when
: I tackle the code and are up to speed. (Beginner = Low Wattage)

I've wondered about this too. It seems to me that a power MOSFET would not be a good choice for a class C amp. Power MOSFETS have a "parasitic" diode that is connected from drain to source. This diode is an artifact of the manufacturing process. In most applications this diode is reverse biased. But what happens in class C service when the drain swings negative (for N channel mosfet)? Wouldn't this intrinsic diode tend to clamp negative swing on the drain? It would degrade the efficiency and Q of the output network, I would think. I guess class A or AB service might work.

1113. Re: Help w/ 'RF Design' Magazine article 1/88 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 00:06:20 UTC
From: hawthorn@msc.cornell.edu
Message-ID: <2qmj5s$fj2@panther.msc.cornell.edu>
Source record: 117859

dean@splinter.coe.neu.edu (Dean Gelabert) writes:
> Hi:
> Does anyone read RF Design? I'm looking for an article entitled 'Simple
> Spectrum Analyzer, A Pocket Sized 0-100 Mhz Unit Uses Only Three IC's'
> by A. Halfrick. I believe it's in the Jan. 88 issue. If so, could I please
> have a copy or an adress to retrieve that issue? Thanks in advance.
> -Thomas
>

I have the 1988 Directory Issue of RF Design. The article is listed as
"A Simple Spectrum Analyzer," Albert Helfrick, Jan. '88 , p. 35

Somewhere I must have the article, but it's not in its place.
-dean

1114. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 03:41:05 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2qmvoh$8s@abyss.West.Sun.COM>
Source record: 117854

In article 6nF@netcom.com, tgm@netcom.com (Thomas G. McWilliams) writes:
>David Sharpe (dws30@p1dbg02cd.amdahl.com) wrote:
>: Subject says it all for the most part. Toying with the idea of building
>: a QRP Amp out of MOSFETS. Any schematics or pointers to information
>: would be greatly appreciated. Want to build one for VHF/UHF and HF when
>: I tackle the code and are up to speed. (Beginner = Low Wattage)
>
>I've wondered about this too. It seems to me that a power MOSFET
>would not be a good choice for a class C amp. Power MOSFETS have
>a "parasitic" diode that is connected from drain to source. This
>diode is an artifact of the manufacturing process. In most
>applications this diode is reverse biased. But what happens in
>class C service when the drain swings negative (for N channel
>mosfet)? Wouldn't this intrinsic diode tend to clamp negative
>swing on the drain? It would degrade the efficiency and Q of
>the output network, I would think. I guess class A or AB service
>might work.

Umm... under normal circumstances, the drain doesn't swing below ground.

I've built several power MOSFET RF amplifiers, mostly with IRF511 and
MTP3055E. They all worked quite well. Using a 24V drain supply results
in greater efficiency and higher output power. I could get 35W+ out of
an MTP3055E on 20m with maybe 500mW of drive. I never managed to find a
really good input match; it was always about 2:1, which isn't awful. A
-3dB pad would improve it a little.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1115. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 05:01:47 UTC
From: dws30@p1dbg02cd.amdahl.com
Message-ID: <1994May10.050147.11252@ccc.amdahl.com>
Source record: 117853

So best bet is to stick with transistors vs MOSFETs. Any good FTP sites
for schematics and usefull pointers?
--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com

1116. *****Ideas sought for a 400MHz oscillator design*****

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 08:17:42 UTC
From: snorris@harp.aix.calpoly.edu
Message-ID: <1994May10.081742.173886@zeus.aix.calpoly.edu>
Source record: 117855

I am working on a senior project that requires the use of a 400MHz sine wave local oscillator. This oscillator will be used to construct a portable, multi-band frequency converter which can be placed on a handheld amateur radio.

My question is: Does anyone have any ideas for generating a 400MHz sinewave? It should be capable of delivering about +7dBm into 50 ohms and be able to run from a 7.2V battery.

I have looked around a bit, but have yet to find anything that really goes up that high in frequency. I have kicked around a few ideas, but I wanted to see if anyone here had some good ideas before I started trying circuits.

Also, I would rather the circuit use lumped elements (i.e SMD) because I want to keep the circuit absolutely as small as possible and I think distributed elements would make it too large for what I want.

So if anyone has any circuit ideas or can suggest some good references, then please E-mail me as soon as possible.

Thanks in advance,

Sean

Sean Norris snorris@trumpet.aix.calpoly.edu
--KE6BTE-- Electronic Engineers do it with less resistance.

1117. Re: *****Ideas sought for a 400MHz oscillator design*****&#65533;

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 09:43:00 UTC
From: elendir@enst.fr
Message-ID: <2qnkv4$4vo@cismsun.univ-lyon1.fr>
Source record: 117856

Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
: I am working on a senior project that requires the use of a 400MHz sine
: wave local oscillator. This oscillator will be used to construct a portable,
: multi-band frequency converter which can be placed on a handheld amateur
: radio.
: My question is: Does anyone have any ideas for generating a 400MHz sinewave?
: It should be capable of delivering about +7dBm into 50 ohms and be able
: to run from a 7.2V battery.

Sean,
Build a 130 MHz oscillator and use a frequency tripler. Works fine. The
tripler can also amplify your signal up to your requirements ; the
oscillator is not loaded anymore, so it is far more stable.
It&#65533;s the way I&#65533;m going to cope for a home-made VHF/UHF all mode TX.

73 !
Vince.

--
PSG --- Paris SG football club. | Ham radio call : F1RCS

ENST - Ecole Nationale Superieure des Telecommunications, Paris, France

1118. UHF Push/Pull design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 09:48:38 UTC
From: elendir@enst.fr
Message-ID: <2qnl9m$4vo@cismsun.univ-lyon1.fr>
Source record: 117857

Hi !

I have been scared by the price of the latest VHF/UHF all mods rigs. So
I decided to build my own. However, I m looking for a UHF Push-Pull design.
The very problem I have is in the design of the 180 degrees phase shifter.
In VHF, I can use a small transformer with a ground tap in the middle, but
this cannot be applied to UHF. I thought about a printed transformer or a
transistor operating as an inverter. Neither those seem really satisfactory.
Does someone have any clue ?

Thanks and 73 !

Vince.

--
PSG --- Paris SG football club. | Ham radio call : F1RCS

ENST - Ecole Nationale Superieure des Telecommunications, Paris, France

1119. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 11:26:28 UTC
From: ega066@comp.lancs.ac.uk
Message-ID: <CpL3s5.GLH@comp.lancs.ac.uk>
Source record: 117858

In class-C type operation you won't find the drain voltage swinging negative. Ignoring the FET on-resistance, the average drain voltage would simply be the DC supply level, V, and in operation the drain voltage would swing from 0V to 2V. Practically, the device on-resistance limits the downward swing to a few volts, however. Therefore it's better to use high supply voltages for FETs (ie. higher than 12V), to increase the voltage swing available.

Quite a good way to drive FETs is a simple complementary emitter-follower pair. This configuration can provide sufficient current to charge/ discharge the effective gate capacitance, which can be large for power devices being switched on/off. The only
problem is getting hold of a PNP device with high ft. It does save messing about with matching networks, though.
Motorola note AR-141 in their RF Device book give good info on this subject, with regard to driving class-D/E DMOS FET stages.

For low power HF operation, switching FETs have a lot going for them. They are very easy to bias, cheap, they don't exhibit thermal runaway and it's easy to drive them.

Good luck,,

Simon G0GWA.

1120. UHF Power amps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 13:08:03 UTC
From: jfk@cs.adel.edu.au
Message-ID: <jfk.1.000D22C9@cs.adel.edu.au>
Source record: 117772

Hi,

Does anyone know of any good articles or books with practical circuits for the construction of power amps for 70cm.

Also any hints on reducing receiver desense when TX on UHF and RCV on 2.4Ghz, Oscar 13 Mode S.

73's

1121. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 14:01:36 UTC
From: zlau@arrl.org
Message-ID: <1994May10.140136.2301@arrl.org>
Source record: 117860

Thomas G. McWilliams (tgm@netcom.com) wrote:
: David Sharpe (dws30@p1dbg02cd.amdahl.com) wrote:
: : Subject says it all for the most part. Toying with the idea of building
: : a QRP Amp out of MOSFETS. Any schematics or pointers to information
: : would be greatly appreciated. Want to build one for VHF/UHF and HF when
: : I tackle the code and are up to speed. (Beginner = Low Wattage)

December 1986/QRP Classics has a HF QRP transmitter design by Mike Masterson. It is class C with very good efficiency. The Siliconix application notes characterize the diode as having a slow recovery speed (200 to 400 ns), which means it is too slow to switch on and cause problems at HF. The gate capacitance of cheap FETs is quite high, which makes them tougher to use at higher frquencies.

The November 1989 QST Technical correspondence piece by Hayward is worth reading. Interestingly, a ferrite bead can destabilize a FET amplifier (contrary to some people's opinion). It recommends low impedance, non-inductive terminations for class A amplifiers.

: I've wondered about this too. It seems to me that a power MOSFET
: would not be a good choice for a class C amp. Power MOSFETS have
: a "parasitic" diode that is connected from drain to source. This
: diode is an artifact of the manufacturing process. In most
: applications this diode is reverse biased. But what happens in
: class C service when the drain swings negative (for N channel
: mosfet)? Wouldn't this intrinsic diode tend to clamp negative
: swing on the drain? It would degrade the efficiency and Q of
: the output network, I would think. I guess class A or AB service
: might work.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1122. Re: TI 320C26 DSP Eval Kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 16:29:33 UTC
From: jpll@vectorbd.com
Message-ID: <CpLHtA.E66@vectorbd.com>
Source record: 117863

there's more info on this in rec.radio.amateur.digital.misc

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

1123. Re: *****Ideas sought for a 400MHz oscillator design*****

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 17:04:26 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2qoeqq$loo@nntp2.Stanford.EDU>
Source record: 117861

In article <1994May10.081742.173886@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu (Sean Norris) writes:
>I am working on a senior project that requires the use of a 400MHz sine
>wave local oscillator. This oscillator will be used to construct a portable,
>multi-band frequency converter which can be placed on a handheld amateur
>radio.
>
>My question is: Does anyone have any ideas for generating a 400MHz sinewave?
>It should be capable of delivering about +7dBm into 50 ohms and be able
>to run from a 7.2V battery.
>
>I have looked around a bit, but have yet to find anything that really
>goes up that high in frequency. I have kicked around a few ideas, but I
>wanted to see if anyone here had some good ideas before I started trying
>circuits.
>
>Also, I would rather the circuit use lumped elements (i.e SMD) because I
>want to keep the circuit absolutely as small as possible and I think
>distributed elements would make it too large for what I want.
>
>So if anyone has any circuit ideas or can suggest some good references,

There are two basic approaches to your problem. First is a crystal osc.
and multiplier system. The other way is to use a VCO and PLL system.
In today's world, the PLL/VCO system would probably be the winner since
it would be about the same size as the osc/mult and offer the additional
feature of frequency agility. Consult recent data and applications books
for Fujitsu, Philips and Motorola PLL Synthesizers for details.

Also, you mentioned the need for the oscillator to be a sine wave. It
sounds like you may be driving a balanced mixer in your converter. By
nature, the diodes within a balanced mixer square up an incomming LO
anyway. Those mixers will work just fine being driven by something
less than a pure sine wave and, in fact, I have seen designs where
the mixer was driven directly by an ECL square wave and the mixers
are quite happy.

There may be some basic theory in the new ARRL microwave experimenters
manual.

Good Luck Steve Muther WF6R (also Cal Poly Alum '89)
stevem@w6yx.stanford.edu

1124. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 21:59:20 UTC
From: charlier@lsid.hp.com
Message-ID: <CpLx2w.IE4@hpcvsnz.cv.hp.com>
Source record: 117864

David Sharpe (dws30@p1dbg02cd.amdahl.com) wrote:
: Subject says it all for the most part. Toying with the idea of building
: a QRP Amp out of MOSFETS. Any schematics or pointers to information
: would be greatly appriciated. Want to build one for VHF/UHF and HF when
: I tackle the code and are up to speed. (Beginner = Low Wattage)

Here's another interesting article:

"80m Radio Transmitter uses power MOSFETS" (Design Ideas section)
by Robert G Culter (N7FKI) EDN, November 28, 1985, p280.

This uses an MPF910 as a crystal oscillator, followed by an MTP12N10
power amp. He claims the puppy will put out about 45W, and you can
(or could in 1985) build this for less than $20 (color burst crystal).
One of the interesting features is that he uses the Ciss of the amplifier
as part of the feedback for the oscillator. He also claims that he got
84% efficiency out of the output stage.

I wonder if it chirps; kind of hard for me to believe a 2-stage rig
putting out 45W wouldn't...

--
Charlie Panek KX7L Hewlett Packard Company
charlier@lsid.hp.com Lake Stevens Instrument Division
Everett, Washington

1125. Re: *****Ideas sought for a 400MHz oscillat

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-10 21:59:55 UTC
From: basilier@sps.mot.com
Message-ID: <1994May10.215955.4976@newsgate.sps.mot.com>
Source record: 117862

In article loo@nntp2.Stanford.EDU, stevem@w6yx.stanford.edu (Steve Muther) writes:
> In article <1994May10.081742.173886@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu (Sean Norris) writes:
> >I am working on a senior project that requires the use of a 400MHz sine
> >wave local oscillator. This oscillator will be used to construct a portable,
> >multi-band frequency converter which can be placed on a handheld amateur
> >radio.
> >
> >My question is: Does anyone have any ideas for generating a 400MHz sinewave?
> >It should be capable of delivering about +7dBm into 50 ohms and be able
> >to run from a 7.2V battery.
> >
> >I have looked around a bit, but have yet to find anything that really
> >goes up that high in frequency. I have kicked around a few ideas, but I
> >wanted to see if anyone here had some good ideas before I started trying
> >circuits.
> >
> >Also, I would rather the circuit use lumped elements (i.e SMD) because I
> >want to keep the circuit absolutely as small as possible and I think
> >distributed elements would make it too large for what I want.
> >
> >So if anyone has any circuit ideas or can suggest some good references,
>

Look at the receive converter for 440 MHz ATV which is included in recent editions or the ARRL Handbook. It uses a VFO oscillating at just under 400 MHz. However, the layout is critical. I built mine dead bug style and had to move things around a bit. Watch ground capacitances if you want to reach 400 MHz or above. I used 1/4" square pads of circuit board glued to the ground plane for support. As a result I had to make the inductor smaller than in the article.

73,
Erik Basilier, WU7O
basilier@emailchd.sps.mot.com

1126. Re: *****Ideas sought for a 400MHz oscillator design*****

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 00:37:04 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994May11.003704.20345@vlsi.polymtl.ca>
Source record: 117865

In article <1994May10.081742.173886@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu (Sean Norris) writes:
>I am working on a senior project that requires the use of a 400MHz sine
>wave local oscillator. This oscillator will be used to construct a portable,

...stuff killed...

Sean:

What do you want?...a VCO or what? You have to be more specific. The level which you mention tells me the you will be running a standard DBM. Did you ever consider using an actice mixer/VCO made by a number of companies...like SIgnetics/Philips. Using these 'builing blocks' will greatly reduce the size you can expect your RF deck to be. Of course, they are available in surface mount too.

Nick

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****

* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

1127. Re: UHF Push/Pull design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 04:27:40 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994May11.042740.12475@ke4zv.atl.ga.us>
Source record: 117866

In article <2qnl9m$4vo@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:
>
> I have been scared by the price of the latest VHF/UHF all mods rigs. So
>I decided to build my own. However, I m looking for a UHF Push-Pull design.
>The very problem I have is in the design of the 180 degrees phase shifter.
>In VHF, I can use a small transformer with a ground tap in the middle, but
>this cannot be applied to UHF. I thought about a printed transformer or a
>transistor operating as an inverter. Neither those seem really satisfactory.
>Does someone have any clue ?

Sure just use a halfwave of transmission line as a very simple balun. It
works for antennas, and it'll work as a push-pull input network too.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1128. Re: UHF Push/Pull design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 09:01:48 UTC
From: elendir@enst.fr
Message-ID: <2qq6ts$334@cismsun.univ-lyon1.fr>
Source record: 117867

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
I wrote ...
: >Does someone have any clue ?

: Sure just use a halfwave of transmission line as a very simple balun. It
: works for antennas, and it'll work as a push-pull input network too.

Ok. Seems to be the only way to do it. Then, I have even not to care about the
size of the trace !

Thanks !
Vincent - F 1 RCS
--

1129. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 10:29:08 UTC
From: elendir@enst.fr
Message-ID: <2qqc1k$334@cismsun.univ-lyon1.fr>
Source record: 117768

Dana Myers (myers@spot.West.Sun.COM) wrote:
: >class C service when the drain swings negative (for N channel
: >mosfet)? Wouldn't this intrinsic diode tend to clamp negative
: >swing on the drain? It would degrade the efficiency and Q of
: >the output network, I would think. I guess class A or AB service
: >might work.

: Umm... under normal circumstances, the drain doesn't swing below ground.

Yup. And you can, if you wish, insert a protective diode in the drain
circuit.
FET are ideally suited for class E operation - Class AB is also possible, and
if you want to build a SSB rig anyway, I don't advise you to use class C :-)

For further info consult Motorola Application Note AN860. As a general rule,
FET have more stable input impedances, but are not really suited for low-power
applications (due to Drain-source saturation voltage).

Vince - F1RCS

--
PSG --- Paris SG football club. | Ham radio call : F1RCS

ENST - Ecole Nationale Superieure des Telecommunications, Paris, France

1130. Re: Wanted : Cheap, available varacter diode source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 13:02:46 UTC
From: bodafu@ccvax.sinica.edu.tw
Message-ID: <bodafu.105.024A6EC2@ccvax.sinica.edu.tw>
Source record: 117769

dean@splinter.coe.neu.edu (Dean Gelabert) writes:

> Hi:
> I'd like to begin experimenting w/ varacter diodes. Can anyone
> recommend an inexpensive, readily available, easy to work w/
> device? Where can I get a few to play with?
>
> -Dean

Dean

Any diode will act as a variable cap when reverse biased. The doohickies sold as 'varacters' have a wider response and more closely specified properties, but for experimentation any diode will do. I had good results fine tuning a SW receiver using the first small-signal diode I grabbed out of the junk box. The non-conducting region in the reverse-biased diode acts as a dielectric between the terminals; this is the cap. Varying the voltage changes the thickness of the non-conduction region, and thus changes the capacitance.

David

David L. Bergart bodafu@ccvax.sinica.edu.tw bodafu@TWNAS886.bitnet
Copy oddity^h^h^h^h^h^heditor, Botanical Bulletin of Academia Sinica, Taiwan

---

1131. re:cheap Varactor Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 17:06:55 UTC
From: djwang@sneezy.biophys.upenn.edu
Message-ID: <9405111648.AA16767@sneezy.biophys.upenn.edu>
Source record: 117771

dean@splinter.coe.neu.edu (Dean Gelabert) writes:

> Hi:
> I'd like to begin experimenting w/ varacter diodes. Can anyone
> recommend an inexpensive, readily available, easy to work w/
> device? Where can I get a few to play with?

I bought some Siemens BB104 (back-to-back pair varactor) diodes from Fertiks Electronics in Philadelphia ((215)455-2121) a while ago. They sell them at six for a dollar, can't baet that!. You can also get the popular kinds (MV21** and MV22** series) at Dan's Small parts place.

73 de D.J. N2YKP/AA (djwang@sneezy.biophys.upenn.edu)

1132. INSTRUCTION/OPERATORS MANUALS up for grabs:

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 17:45:29 UTC
From: lockhart@mothra.nts.uci.edu
Message-ID: <2qr5jp$por@news.service.uci.edu>
Source record: 117773
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.misc

I have the following INSTRUCTION/OPERATORS MANUALS up for grabs:

HY-GAIN THUNDERBIRD (TH3Mk30 THREE ELEMENT HAM ANTENNA

CDE HAM II ROTOR

These INSTRUCTION/OPERATORS MANUALS are in various states of condition. Some are in good condition and some are in poor condition.

The intent is to give these INSTRUCTION/OPERATOR MANUALS to an individual or entity who ACTUALLY has the equipment.

The first person to send me e-mail gets the booty. Please send a separate e-mail request for each INSTRUCTION OR OPERATORS MANUAL. You will be asked to send a SASE (large manila or other envelope) with the appropriate amount of U.S. postage to me c/o the address in my .sig file.

Good luck to one and all.

73,

~jack_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/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\
| Jack C. Lockhart << SNAILMAIL |
| Radio Systems Engineer E-MAIL > LOCKHART@uci.edu |
|Office of Academic Computing - ECS !BANG! > ...!ucbvax!ucivax!lockhart |
| 2209 Central Plant Building HAM > WD6AEI |
| University of California, Irvine AMPR > WD6AEI@n0ary.#nocal.ca.usa.na |
| Irvine, CA 92717-5475 VOICE > (714) 856-8477 |
| U.S.A FAX > (714) 725-2270 |
\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/
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```
"And in the beginning there was nothing. And God said, 'let there be
light'. And there was still nothing, BUT you could see IT!" -Anonymous
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o _____ | | | |
.][__n_n_|DD[ ====_____ | #include <disclaimer.h> | | |
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```

1133. Want:24 GHz Gunnplexer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 17:47:41 UTC
From: zlau@arrl.org
Message-ID: <1994May11.174741.20238@arrl.org>
Source record: 117775

Looking for 24 GHz Gunnplexer with varactor tuning--trying to
get on all bands/modes used in the Northeast during VHF+
contests.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1134. Re: MOSFET Power Amp Schematics/Info ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-11 18:21:46 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2qr7nq$rh3@abyss.West.Sun.COM>
Source record: 117774

In article 2301@arrl.org, zlau@arrl.org (Zack Lau (KH6CP)) writes:
>
>The November 1989 QST Technical correspondence piece by Hayward is
>worth reading. Interestingly, a ferrite bead can destabilize a
>FET amplifier (contrary to some people's opinion). It recommends
>low impedance, non-inductive terminations for class A amplifiers.

I recall that DeMaw has often suggested using ferrite beads on the gates of power FETs. I stopped doing this after I thought about it for a few moments. This strikes me the same as the "common wisdom" about putting Zener diodes on the collectors of HF amplifier transistors to protect against SWR induced damage. I've never actually measured the time it takes a common 40V Zener diode to start conducting, but I tend to think it is far too slow to clamp an RF wave. I decided the Zener was simply a source of capacitance. Later, I read Roy's (W7EL) letter in QST (also in the QRP Classics ARRL book) which examines the high voltage ringing at the collectors of VHF transistors used in class C amplifiers. Roy speculated that the use of Zeners adds capacitance, which eliminates the ringing.

I'll follow this note up with another regarding the gate capacitance of a power MOSFET....

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1135. Re: Metal-Encased Mica Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 00:53:09 UTC
From: lreiss@liberty.uc.wlu.edu
Message-ID: <1994May12.005309.12355@liberty.uc.wlu.edu>
Source record: 117776

Doug Braun (dbraun@ilx049.iil.intel.com) wrote:
: A HT Amp I bought (RF Concepts) uses these funny capacitors in
: the RF circuits. They look like a collection of bits of mica and other
: stuff, clamped in a little metal frame. They are between 1/4" and 1/2"
: on a side. I also just got a "Surplus Sales of Nebraska" flyer, which
: lists some of them for sale.

: I was wondering: what is the advantage of this type of device?
: They look sort of crude, with an open construction that could
: let solder, moisture, etc. get in and mess them up.

: --
: Doug Braun Intel Israel, Ltd. M/S: IDC-42 (new mailstop!)
: Tel: 011-972-4-655069 dbraun@inside.intel.com

: "Partly as a reaction against the increasingly grubby image of
: punk and partly because of Paul Weller of The Jam's enthusiasm
: for sharp 60's beat styles, 1979 wittnessed a mod revival.
: Largely local to London, this consisted principally of swarms
: of aggressive young mods parading down Caranaby Street (once
: the home of 60's fashion but now a tourist trap) wearing
: period parkas decorated with mod insignia, looking for
: trouble."

Doug
I,ll bet low inductance is the reason for the metal clad
construction. These gems are normally used as bypass caps on power
amplifiers designed for VHF/UHF freqs.
73
Len

****

Leonard J. Reiss Washington & Lee University
KF4JT Tech Services
___|___
o-------O(_)O-------o

****

1136. Need info about packet Ham Radio - FAQ anywhere?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 01:05:28 UTC
From: Martin.Stephenson@cscgpo.anu.edu.au
Message-ID: <Martin.Stephenson.6.00011765@cscgpo.anu.edu.au>
Source record: 117770

I am looking for any info about packet ham radio. Like where can I find an FAQ? :-) I am pretty well after enough information to get someone started with packet ham radio.

My Father was a keen Radio Ham until he moved to Egypt. The easiest way to access the Internet from Egypt would be via Ham radio. The Egyptian telecommunications system stopped being developed sometime in the stone age, and so normal access methods are not economically possible.

I thought this group might be a good place to start to find out more about packet ham radio.

Thanks for any help.

Martin.Stephenson@anu.edu.au

1137. Re: Receiver Sony ICF-SW7600 Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 09:18:41 UTC
From: archive@flash.ATC.Olivetti.Com
Message-ID: <2qss9h$10c@olivea.ATC.Olivetti.Com>
Source record: 117779

I have bought the Sony model ICF-SW7600, European version; as an HF, it receives from 3850 KHz to 26100 KHz, I would like to know, if possible, if I can modify it to receive continuous from 500 KHz to 30 MHz.

Thank you
Maurizio Chalp

Please replay to maurizio@dirdoc.ico.olivetti.com

1138. Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 09:45:32 UTC
From: kc4zvw@stardust.oau.org
Message-ID: <CpooFy.7B5@stardust.oau.org>
Source record: 117792
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

There is a Philips Dream Machine 8XC750 design contest.

If you have ordered their DS-750 toolkit and have figured out what to do
with it or are trying to figure out what to do with it, request to join
the mail list that I have started.

To join send mail to the following (manual) mail server:

DS-750-request@stardust.oau.org

I received my development kit yesterday and am impressed with the contents.
While it comes with a debugger, I wonder if any assembler or compiler for
the 80C51 could be used with it?

I do not work for Philips or any semiconductor manufacturer.

best regards,

// David // (hardware hobbyist)
--
David Billsbrough
kc4zvw@stardust.oau.org

1139. Re: Newbie code Practice receiver -- feasib

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 11:32:04 UTC
From: peter_simpson@3com.com
Message-ID: <2826@bridge2.NSD.3Com.COM>
Source record: 117777

In article 54@drager.com, landisj@drager.com (Joe Landis - System & Network Mgr) writes:
>In article <hamilton.767917015@BIX.com>, hamilton@BIX.com (hamilton on BIX) writes:
>....
>> My advice is to not to waste your money on something cheap. You only
>> get what you pay for. If you're looking for some inexpensive code
>> practice, get the ARRL code practice tapes. They _really_ work and
>> they're really worth the money.
>>
>> Don't expect to practice with the W1AW signals (depending on your
>> location) until you get a "real" radio.
>>
>>
>> Regards,
>> Doug Hamilton KD1UJ hamilton@bix.com Ph 508-358-5715
>> Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117, USA
>
>You can get an old Heathkit reciever or transceiver for under $100, and a good
>one, at that. I got my code up from 5WPM to over 20 by listening to tapes made
>from W1AW on my old SB303. There was an SB303 posted for sale here recently for
>$90. This is a great 2nd receiver to have around too. Or you can always sell
>it for about what you paid for it.
>

If you are contemplating spending $300 or so on a Radio Shack SWL receiver,
take a look at some of the old military stuff (R390, etc). You'll get a lot
more (weight, size, quality) for your money. Some of the more recent stuff is
starting to show up on the market for $500 and above...I've seen Racal stuff
and even some Watkins-Johnson. Check Fair Radio in Lima, OH for the surplus
stuff (if you have room and $ for the shipping :-)

Peter

Peter Simpson, KA1AXY Peter_Simpson@3com.com
3Com Corporation (508) 836-1719 voice
Northborough, MA 01532 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

1140. Re: UHF Push/Pull design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 12:40:23 UTC
From: mallick@crd.ge.com
Message-ID: <CpowJB.Gq8@crdnns.crd.ge.com>
Source record: 117778

In article <2qq6ts$334@cismsun.univ-lyon1.fr>, elendir@enst.fr (Elendir) writes:
|> Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
|> I wrote ...
|> : >Does someone have any clue ?
|>
|> : Sure just use a halfwave of transmission line as a very simple balun. It
|> : works for antennas, and it'll work as a push-pull input network too.
|>
|>
|> Ok. Seems to be the only way to do it. Then, I have even not to care about the
|> size of the trace !
|>
|> Thanks !
|> Vincent - F 1 RCS
|> --

That's the way it is done in the 432 amplifier kit I bought from Communications Concepts (a kit-ed Motorola app note design). Works well.

73
--
....
John A. Mallick WA1HNL E-mail: mallick@crd.ge.com
GE Corporate Research and Development Phone: (518)-387-7667 (W)
Schenectady, NY 12301 FAX: (518)-387-6560 (W)
....

"Work like hell. Tell everyone everything you know. Close a deal
with a handshake. And have fun." --- "Doc" Edgerton

1141. Re: UHF Power amps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 14:45:01 UTC
From: jernandez@pbs.org
Message-ID: <jernandez-120594094501@jernandez.pbs.org>
Source record: 117780

In article <jfk.1.000D22C9@cs.adel.edu.au>, jfk@cs.adel.edu.au (John Kavanagh) wrote:

> Hi,
>
> Does anyone know of any good articles or books with practical circuits for the
> construction of power amps for 70cm.

Look in the Motorola RF device catalog. It has a multitude of good app notes in the back of the book.

--
John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

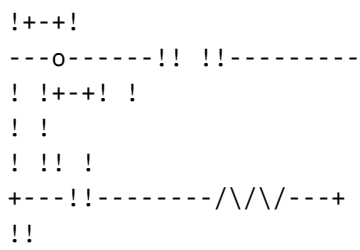
E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

1142. Xtal temp. compensation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 15:34:26 UTC
From: randolph@est.enet.dec.com
Message-ID: <Cpp2C6.6yD@ryn.mro.dec.com>
Source record: 117782
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I'm building a simple crystal freq reference... something I can zero beat against WWV, and then use as a standard for setting my freq. counter.

Any thoughts on temperature compensation for this? I have an old Motorola HT220 (soon to be moved down to the 440 ham band) in which they use a cap and thermistor, like this:



Sure beats a crystal oven, if I can figure out a way to implement it. What do I need to think about in designing this little circuit?
-Tom R. N1OOQ randolph@est.enet.dec.com

1143. Re: Help w/ 'RF Design' Magazine article 1/88 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 19:30:41 UTC
From: <>
Message-ID: <CppFJ7.6Fu@walter.bellcore.com>
Source record: 117783

Helfrick has a book on Spectrum Analyzers and a full
hardware design.

ISBN: 0-12-338250-5
Helfrick, A.D.
Electrical Spectrum and Network Analyzers
Academic Press, Inc.

Chase

Chase Cotton cotton@thumper.bellcore.com

1144. Re: Xtal temp. compensation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 19:43:23 UTC
From: alanb@sr.hp.com
Message-ID: <CppG4D.58D@srgenprp.sr.hp.com>
Source record: 117781
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tom Randolph (randolph@est.enet.dec.com) wrote:

: I'm building a simple crystal freq reference... something I can zero beat
: against WWV, and then use as a standard for setting my freq. counter.

: Any thoughts on temperature compensation for this? ...

The problem is that quartz crystals do not have a linear frequency
versus temperature curve. Standard AT-cut crystals are generally
manufactured so that the inflection point in the F vs t curve is
flat at room temperature. So no compensation is needed so long
as you stay close to room temperature and the rest of your circuit
doesn't degrade crystal stability.

Crystals intended for use in temperature-controlled ovens are designed
to have a flat inflection point at the oven temperature.

Let's see if I can do an ASCII graph of an AT-cut crystal's frequency
versus temperature curve:

```
\
^ \
| \
| \
Freq \
\
-
- _
---------- _
-
-
\
\
\
\
\
| \
Temperature -----> 25 deg C
```

AL N1AL

1145. Re: Xtal temp. compensation?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-12 22:13:57 UTC
From: tafu@lynx.dac.neu.edu
Message-ID: <2qu9n5$lb8@chaos.dac.neu.edu>
Source record: 117784
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tom Randolph (randolph@est.enet.dec.com) wrote:

: I'm building a simple crystal freq reference... something I can zero beat
: against WWV, and then use as a standard for setting my freq. counter.

: Any thoughts on temperature compensation for this? I have an old Motorola HT220
: (soon to be moved down to the 440 ham band) in which they use a cap and
: thermistor, like this:

```
: !+-+!
: ---o------!! !!----------o----
: ! !+-+! !
: ! !
: ! !! !
: +---!!--------/\/\/---+
: !!
```

: Sure beats a crystal oven, if I can figure out a way to implement it. What do I
: need to think about in designing this little circuit?
: -Tom R. N1OOQ randolph@est.enet.dec.com

You are talking about a TCXO (temperature compensated crystal controlled
oscillator), which is no easy task.

Regards
-Tiger

1146. Re: *****Ideas sought for a 400MHz oscillator design*****

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 01:05:57 UTC
From: chronos@eskimo.com
Message-ID: <Cppv1y.KL5@eskimo.com>
Source record: 117785

Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
: I am working on a senior project that requires the use of a 400MHz sine
: wave local oscillator. This oscillator will be used to construct a portable,
: multi-band frequency converter which can be placed on a handheld amateur
: radio.

: My question is: Does anyone have any ideas for generating a 400MHz sinewave?
: It should be capable of delivering about +7dBm into 50 ohms and be able
: to run from a 7.2V battery.
:
: I have looked around a bit, but have yet to find anything that really
: goes up that high in frequency. I have kicked around a few ideas, but I
: wanted to see if anyone here had some good ideas before I started trying
: circuits.

If you all you need is a stable single frequency of 400MHz, take a look at the Motorola MC13175 VHF/UHF Transmitter Chip.... it is essentially a single frequency synthesizer which will work up to 900MHz. (The MC13175 is used for lower frequencies). I have tried it and it works well ... Moto even has a demo board for it that will likely do the trick for you. Good Luck.

-Chronos

: Also, I would rather the circuit use lumped elements (i.e SMD) because I
: want to keep the circuit absolutely as small as possible and I think
: distributed elements would make it too large for what I want.

: So if anyone has any circuit ideas or can suggest some good references,
: then please E-mail me as soon as possible.

: Thanks in advance,
: Sean
: --
: Sean Norris snorris@trumpet.aix.calpoly.edu
: --KE6BTE-- Electronic Engineers do it with less resistance.
: --
:

1147. Walkie-talkie for data transfer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 08:24:44 UTC
From: Nils-Olof.Svensson@Geol.lu.se
Message-ID: <Nils-Olof.Svensson.34.768817484@Geol.lu.se>
Source record: 117786

I am in the precess of planning the design of electronic barometre for field measurements of altitude (no comersial things, only for my use).
To compensate for drift due to weather changes I need to use two instruments one at a fixed point of known altitude and one I am walking in the terrain with. Either I can have a computer or a person recording values at the fixed station, but better would be to radio transmit data the maximum 2 km to the second unit. To do it cheaply I am thinking of using two Walkie-Talkies for this, the measured voltage at the fixed station should be converted into a voltage depending frequencie and fed into the microphone and transmitted. The receiver gets the frequencie, converts it back to voltage and ads it as a offset to measured pressure value wich then are displayed by a digital volt metre.
As I know nothing about radios etc I am sure there could be some problems, such as: which audible frequency interval is best to use?, can the sent freq. be a square wave or is sinus better?, can I connect directly to Microphone and speakerconnections or would an Optic or audible coupler be better? How to eliminate or reduce noice?, Will a Walkie-Talkie manage to transmit continously for a day (with a large battery)? Is there a better solution?
Any hints to these questions or other complications would be most valuable.

Best regards

Nils-Olof Svensson
Dept of Quat. Geology, Lund University
Email Nils-Olof.Svensson@geol.lu.se

1148. Re: UHF Power amps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 11:58:31 UTC
From: vaillan@ireq.hydro.qc.ca
Message-ID: <Cpqp9J.Ms7@ireq.hydro.qc.ca>
Source record: 117791

In article 000D22C9@cs.adel.edu.au, jfk@cs.adel.edu.au (John Kavanagh) writes:
>Hi,
>
>Does anyone know of any good articles or books with practical circuits for the
>construction of power amps for 70cm.

In the Aug 1992, Electronics Now, p 67-70, there is an article on how to build a
2 to 10 watts UHF (ATV) Linear Amp. The transistor is an MRF 654.
I don't know if we can use it in fm?
Let me know if you find some others plans.
Good luck
73 de VE2HQJ, Clem.

Clement Vaillancourt, | Institut de Recherche d'Hydro-Quebec
Analyste, | Varennes, P. Quebec, Canada, J3X 1S1
Informatique scientifique | Tel:+1 514 652 8238 Fax:+1 514 652 8309
vaillan@ireq.hydro.qc.ca | Radio-amateur: VE2HQJ@VE2CRL.PQ.CAN.NA

1149. 80 Nanosecond Access EPROM - 27C512

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 15:59:43 UTC
From: seeler@UPEI.CA
Message-ID: <seeler.119.768844783@UPEI.CA>
Source record: 117787

Hi Just a quick note to see if anyone knows of an American distributer for fast access27C512 EPROMs - (80 Nanoseconds). One manufacturer is Advanced Microdevices(AM27C512-75DC) BUT no Canadian Company has these in stock and those whousually carry them have a minimum order of 50 units etc.

I would appreciate it if someone could point me to electronic distributers in the US who may carry this item. a non-800 number or location would help me contact the company.

Thanks in advance - Dave, VY2DCS
Internet: Seeler@upei.ca

1150. Re: Cheap Varactor Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 17:55:50 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2r0ev6$gcq@tekadm1.cse.tek.com>
Source record: 117789

dean@splinter.coe.neu.edu (Dean Gelabert):

> Hi:
> I'd like to begin experimenting w/ varacter diodes. Can anyone
> recommend an inexpensive, readily available, easy to work w/
> device? Where can I get a few to play with?

Any diode has a capacitance which varies with reverse bias. However,
small-signal diodes like the 1N914 have a very small capacitance. Zeners,
on the other hand, have much more and are excellent for general use.
The lower the zener voltage or greater the power rating, the greater
the capacitance. Of course, you shouldn't exceed the zener voltage. (If
you do, no harm will be done if the source is current-limited at a reasonable
value, but the "capacitor" will suddenly get very lossy!) I haven't tried
it, but the emitter-base junction of an ordinary small-signal transistor
should work reasonably well, since most break down at around 4-6 volts
of reverse bias.

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

1151. Re: MOSFET Power Amp Schematics/Info ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 17:58:33 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2r0f49$ggr@tekadm1.cse.tek.com>
Source record: 117788

myers@spot.West.Sun.COM (Dana Myers):

;I recall that DeMaw has often suggested using ferrite beads on the
;gates of power FETs. I stopped doing this after I thought about it
;for a few moments. This strikes me the same as the "common wisdom"
;about putting Zener diodes on the collectors of HF amplifier transistors
;to protect against SWR induced damage. I've never actually measured the
;time it takes a common 40V Zener diode to start conducting, but I tend
;to think it is far too slow to clamp an RF wave. I decided the Zener
;was simply a source of capacitance. Later, I read Roy's (W7EL) letter in
;QST (also in the QRP Classics ARRL book) which examines the high voltage
;ringing at the collectors of VHF transistors used in class C amplifiers.
;Roy speculated that the use of Zeners adds capacitance, which eliminates
;the ringing. . .

The zener capacitance can be enough to eliminate the ringing, but zeners
are fast enough to limit the peaks and protect the output stage from
temporary fault conditions like transmitting with the antenna disconnected.

Roy Lewallen, W7EL
roy.lewallen@tek.com

1152. Ten-Tec 1208 transverter kit - schedule update

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-13 20:54:48 UTC
From: dgf@netcom.com
Message-ID: <dgfCprE3C.A39@netcom.com>
Source record: 117790

As of today 5/13/94 Ten-Tec says of the 6M transverter kit that the manuals are being proofread currently, and shipment expected 7/10 days from now.

E openings going a-wasting :-(

73 Dave WB0GAZ dgf@netcom.com

1153. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 04:50:37 UTC
From: lance@shoppe.UCSC.EDU
Message-ID: <2r1lat$d52@darkstar.UCSC.EDU>
Source record: 117793
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

In article <CpooFy.7B5@stardust.oau.org> kc4zvw@stardust.oau.org (David Billsbrough) writes:
>There is a Philips Dream Machine 8XC750 design contest.
>
>If you have ordered their DS-750 toolkit and have figured out what to do
>with it or are trying to figure out what to do with it, request to join
>the mail list that I have started.
>
>To join send mail to the following (manual) mail server:
>
> DS-750-request@stardust.oau.org
>
>I received my development kit yesterday and am impressed with the contents.
>While it comes with a debugger, I wonder if any assembler or compiler for
>the 80C51 could be used with it?
>
I am also interested in the answer to this question.
Also, are there c compilers for the 80c51 series?
I have a project in mind for the 8xc752, but the
math is a problem for the assembly code.

1154. Re: European Phone Line Specs???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 16:24:14 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2r2tve$62v@hobbes.cc.uga.edu>
Source record: 117794

In article <francis4-040594110947@dfrancis.apple.com> francis4@applelink.apple.com (Dexter Wm. Francis) writes:
>The ARRL Handbook has a section that details the available range of voltage
>and current on U.S. phone lines. Does anyone know what the numbers are for
>phone systems in Europe?

My understanding is that they are about the same; comp.dcom.telecom would
know for sure.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1155. Re: Help w/ 'RF Design' Magazine article 1/88 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 16:26:13 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2r2u35$667@hobbes.cc.uga.edu>
Source record: 117795

If you are associated with a college or university, the obvious thing to do is order a Xerox copy through your library's interlibrary loan service. They will have another library find it, copy it, and send it to them for you.

Some public libraries also do this.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1156. Re: Walkie-talkie for data transfer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 17:46:08 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2r32p0$e3k@ohlone.kn.PacBell.COM>
Source record: 117796

You may get more responses by posting this to the
rec.radio.amateur.homebrew newsgroup.

The radio transmitter will need a modem between the data source and the
microphone. Connect the serial data to the transmitter of the modem, and
use a volume control to reduce the level. The modem puts out a tone that
will work with the walkie talkie's microphone.

You didn't say how much data you will transmit, but it will
be better and easier for the receiver if the data is transmitted slowly.
The receiver will need the same kind of modem, connected to the speaker
output. Older modems that run at 300 BPS or 1200 BPS should work. By
the way, they put out sine waves, but the modulation can make the sine
wave do some very strange things.

It sounds like you are trying to eliminate having another human being on
the other end of the RF link. You could have a tape recorder connected to
the receiver on the far end, and just speak the data into the microphone
of the walkie talkie. Later, you could record all the data on your
computer. This takes more time, but it might be more reliable. 2 Km is
quite a long distance for a pair of walkie talkies to receive over.

Maybe you could use solar power if you are concerned about battery
lifetime.

--
@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@

1157. Re: Receiver Sony ICF-SW7600 Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 18:00:58 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2r33kq$e3k@ohlone.kn.PacBell.COM>
Source record: 117797

```
DCG Mktg Docmnt (Ivrea) (archive@flash.ATC.Olivetti.Com) wrote:

: I have bought the Sony model ICF-SW7600, European version; as an
: HF, it receives from 3850 KHz to 26100 KHz, I would like to know,
: if possible, if I can modify it to receive continuous from 500 KHz
: to 30 MHz.

: Thank you
: Maurizio Chalp

: Please replay to maurizio@dirdoc.ico.olivetti.com

On many HF radios, the lower frequency has a certain setting because just
below it is the first IF frequency. If you try to lower the receiving
frequency, the radio will just receive its own IF or local oscillator
frequencies. The radio will oscillate or just won't work. If you look
at the specifications for your radio, you may find that the first IF is
not too far below the lowest receiving frequency, 3850 KHz.

--
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
```

1158. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 18:33:46 UTC
From: cybex@moontarz.nuance.com
Message-ID: <2r35ia$bla@moontarz.nuance.com>
Source record: 117801
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

kc4zvw@stardust.oau.org (David Billsbrough) writes:

>I received my development kit yesterday and am impressed with the contents.
>While it comes with a debugger, I wonder if any assembler or compiler for
>the 80C51 could be used with it?
>// David // (hardware hobbyist)
>--
>David Billsbrough
>kc4zvw@stardust.oau.org
David,
According to Phillips IC20 Data Book on 80C51-Based microcontrollers,
in the 8xC751 overview
"PLEASE NOTE: The instruction set of the 83C751 is
identical to the 80C51 except for the instructions:
MOVX, LCALL, and LJUMP, which are not implemented.
Care must be taken not to use any of these instructions
in a user program, especially when using a high level
language such as C."
So if you're using an assembler, just avoid those instructions. If you
want to use a C, there *might* be a way to force your compiler to not
use the LCALL and LJUMP instructions. I ues Franklin's C compiler, and
using the #pragma ROM(COMPACT) forces the compiler to use ACALL and
AJUMP.
Hope this helped.

Paul

+---+
| Paul Durden Cybex Corporation cybex@nuance.com |
| Product Engineer 4912 Research Drive |
| (205)430-4020 x234 Huntsville, AL USA After June 1, 1994 |
| FAX: (205)430-4030 35805 Paul.Durden@mail.cybex.com |
+---+
DISCLAIMER: The warped views and opinions are mine and do not reflect
the views and opinions of Cybex Corporation.

1159. Re: Receiver Sony ICF-SW7600 Mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 19:11:04 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2r37o8$8tk@hobbes.cc.uga.edu>
Source record: 117798

In article <2r33kq$e3k@ohlone.kn.PacBell.COM> jlundgre@kn.pacbell.com (John Lundgren) writes:
>
>DCG Mktg Docmnt (Ivrea) (archive@flash.ATC.Olivetti.Com) wrote:
>
>: I have bought the Sony model ICF-SW7600, European version; as an
>: HF, it receives from 3850 KHz to 26100 KHz, I would like to know,
>: if possible, if I can modify it to receive continuous from 500 KHz
>: to 30 MHz.
>
>On many HF radios, the lower frequency has a certain setting because just
>below it is the first IF frequency. If you try to lower the receiving
>frequency, the radio will just receive its own IF or local oscillator
>frequencies. The radio will oscillate or just won't work. If you look
>at the specifications for your radio, you may find that the first IF is
>not too far below the lowest receiving frequency, 3850 KHz.

Or he may find that the European version of this radio covers a narrower version of frequencies than the American one and that he can convert it into the American version by changing a jumper. I'm not at all sure whether this is the case with the 7600, but it's worth looking up.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1160. Re: SEARCHING FOR LOW POW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 22:24:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.45.7584.0NFB278A@woodybbs.com>
Source record: 117799

@SUBJECT:Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND
<2q6iqe$jtm@engnews2.Eng.Sun.COM>

>Michael Miles (mbm1949@u.cc.utah.edu) wrote:
>: Rich Krinsky (rich@cmc) wrote:
>: : I am interested in designing an FM transmitter for broadcast in the FM
>band.
>: : The device will be digitally tuned (not with a screwdriver!).
>: : 1. Does anyone have any design information for such a product?

Contact: Pan-Com International
A Division of Pan-Axis Productions
P O Box 130
Paradise, CA 95967-0130
Tel: 916 534-0417

They have a variety of PLL (digitally tuned) FM exiter kits that run
anywhere from 1/2 to 10 watts, mono or stereo. You can buy plans only,
plans + PC board, complete kit, or assembled unit.

For example, their FME5 has the following specs:

Freq: 87 - 109 MHz in 25 kHz steps (PLL)
Output power: Adjustable up to 5 Watts
Spurious Outputs: -40 db
Audio Response: 20 - 90,000 Hz
Audio input: 600 ohms
Mode: Mono (stereo generator available)
RF output impedance: 50 to 75 ohms

The complete kit costs about $200 less power supply & cabinet.
It requires +12 and -12 volts at 650 ma. Plans only are about $25.

Art

1161. GOPHER archives for rec.radio.amateur.[antenna|homebrew],QRP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-14 23:54:52 UTC
From: modena@sunSITE.unc.edu
Message-ID: <2r3occ$jc9@bigblue.oit.unc.edu>
Source record: 117800
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

```
Advisory on GOPHER-accessible archives of:

rec.radio.amateur.antenna

rec.radio.amateur.homebrew

QRP@Think.com

Subject-threaded articles from the above mentioned topics can be read
via GOPHER (and presumably MOSIAC and WWW). Individual articles can
be retrieved via the built-in email mailer (press 'm' to pop the menu).

One can assess these archives in one of two ways:

1. Via your local GOPHER client

2. Telnet to the public GOPHER server at SunSITE.

At the present time, simple FTP access to these archives is not possible.

1. Use the following profile to point your local GOPHER client to
the appropraite part of sunsite.unc.edu:

+---------------------------------------------------------------------+
#
Type=1+
Name=Electronics & Computers
Path=1/../.pub/academic/agriculture/agronomy/electronics+computers
Host=calypso-2.oit.unc.edu.
Port=70
Admin=Jonathan Magid and Simon Spero, 919-962-9107 <ftpkeeper@sunsite.unc.edu>
ModDate=Sat May 14 16:54:22 1994 <19940514165422>
URL: gopher://calypso-2.oit.unc.edu.:70/11/../.pub/academic/agriculture/
agronomy/electronics+computers
+---------------------------------------------------------------------+

NOTE: The URL: line was too long to send on Usenet. Join the line
subsequent to the URL: line back to the URL: line before putting the
profile item in your .link file.

The GOPHER directory will look like this:

Internet Gopher Information Client 2.0 pl11
Electronics & Computers

1. Ham Radio Callbook Server - SUNY at Buffalo <TEL>
---> 2. Archives of rec.amateur.radio.ANTENNAS /
3. Archives of rec.radio.amateur.HOMEBREW /
```

```
4. Archives of QRP ... threaded from Think.com /
5. Archives of sci.ELECTRONICS /
6. . . . . other HAM RADIO related items /
7. OS2: an FAQ, the IBM Gopher and other trivia /
8. COLEM /
9. NEC /

2. TELNET to a GOPHER server (an example session)

>telnet sunsite.unc.edu
Trying 198.86.40.81 ...
Connected to sunsite.unc.edu.
Escape character is '^]'.
****************** Welcome to SunSITE.unc.edu ******************
SunSITE offers several public services via login. These include:

For a simple gopher client, login as gopher
.....

Internet Gopher Information Client 2.0 pl11
Root gopher server: gopher.unc.edu

--> 5. Worlds of SunSITE -- by Subject/

.....

Internet Gopher Information Client 2.0 pl11
Worlds of SunSITE -- by Subject

--> 3. Browse All Sunsite Archives/

.....

Internet Gopher Information Client 2.0 pl11
Browse All Sunsite Archives

--> 8. academic software written by researchers in different disci.../

.....

Internet Gopher Information Client 2.0 pl11
academic software written by researchers in different disciplines

--> 3. agriculture information about scientific farming, horti.../

.....

Internet Gopher Information Client 2.0 pl11

agriculture information about scientific farming, horticulture, and .../

--> 3. agronomy/

.....
```

```
Internet Gopher Information Client 2.0 pl11
agronomy

--> 8. Electronics & Computers /

.....
Internet Gopher Information Client 2.0 pl11
Electronics & Computers

1. Ham Radio Callbook Server - SUNY at Buffalo <TEL>
--> 2. Archives of rec.amateur.radio.ANTENNAS /
3. Archives of rec.radio.amateur.HOMEBREW /
4. Archives of QRP ... threaded from Think.com /
5. Archives of sci.ELECTRONICS /
6. . . . . other HAM RADIO related items /
7. OS2: an FAQ, the IBM Gopher and other trivia /
8. COLEM /
9. NEC /

--
73/Steve Modena/AB4EL MODENA@sunsite.unc.edu

ham-radio gopher advisory/version 1.0.0/14 May 94
```

1162. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 13:45:32 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-769009526@unomaha.edu>
Source record: 117804
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

```
Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
==========

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

1163. What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 14:32:43 UTC
From: denglet1@iia.org
Message-ID: <2r5bqb$36u@mary.iia.org>
Source record: 117802

I have about 40 or so old circuit boards with some socketed chips that I was wondering what they might be good for. Can anyone can give me a brief functional description of these chips? I presume they are coming from something like a mainframe modem. If so, it would be nice to build some ham modems if posible, or perhaps a PC controlled antenna for tracking satellites. Or are they destined to be a very small boat anchor? I hate to throw them away, I am sure they would like to do some more digital work.

[1] AM2910BPC - 40 pin - 3 of these on each board.
8405DM

[2] AM2910DC - 40 pin - One of these, is this the same as the 8345DM prior chip [1]? Is the 8345DM just a date?

[3] Z80A CPU - 40 pin - I know this is a Z80? What is a good source of playing with this chip?

[4] N82S147N - 20 pin - 5 per board. with these additional second line numbers: D1N 48 REV A
D0N 48 REV A
HP0N48 R A
HP1N48 R A
HP2N48 REV.A

[5] MB7124E - 20 pin - 1 per board
HP3N48RA

[6] TMS - 24 pin - See through window on top
2516JL-35
MFP8401

There are also a gadzillion soldered chips on the boards. Mostly 74 series hex inverters, gates, etc. which I do have info on from the TLL cookbook. What is a good way to remove these guys if I wanted to?

What is a good source to find info on these chips?

Tom Dengler - KE4IRV
denglet1@iia.org

* SLMR 2.1a *

1164. Re: What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 15:21:00 UTC
From: ard@siva.bris.ac.uk
Message-ID: <15MAY199416212173@siva.bris.ac.uk>
Source record: 117803

In article <2r5bqb$36u@mary.iia.org>, denglet1@iia.org (Tom Dengler) writes...
>[1] AM2910BPC - 40 pin - 3 of these on each board.
> 8405DM
>
>[2] AM2910DC - 40 pin - One of these, is this the same as the
> 8345DM prior chip [1]? Is the 8345DM just a date?

It's extremely unusual to have more than one 2910 per board - are you sure none of them are 2901's? I've made that mistake... Anyway,
The 2910 is a 12bit microcode sequencer from AMD. Basically, it's a chip for generating the addresses for the internal control program of a microcoded CPU. It contains a 4-level subroutine stack, and the program counter. The problem with it is that there is no easy way to cascade more than 1 of the chips to have more than 12 bits of address. Otherwise, it's quite a useful chip if you're into designing your own processor.
The 2901 is a 4-bit ALU and register bank. Again, only useful if you're designing a CPU.
Both those chips are from AMD. I think they're being discontinued soon.

>
>[3] Z80A CPU - 40 pin - I know this is a Z80? What is a good
> source of playing with this chip?

Yes, 4MHz Z80 CPU. Look at the Zilog data sheets for more information

>
>[4] N82S147N - 20 pin - 5 per board. with these additional
> second line numbers: D1N 48 REV A
> D0N 48 REV A
> HP0N48 R A
> HP1N48 R A
> HP2N48 REV.A

512 byte * 8bit PROM. Probably useless as it's already been programmed.

>
>[5] MB7124E - 20 pin - 1 per board
> HP3N48RA
>
>[6] TMS - 24 pin - See through window on top
> 2516JL-35
> MFP8401

2K*8 EPROM.

>
>There are also a gadzillion soldered chips on the boards. Mostly 74

>series hex inverters, gates, etc. which I do have info on from the TLL
>cookbook. What is a good way to remove these guys if I wanted to?

I've perfected (?) the art of unsoldering a chip from a through-hole-plated PCB and leaving both the chip and board in one piece. However, that's non-trivial to do. If you just want to remove the chips, and don't care about the board, I'm told that a hot-air paint stripper, or a propane torch will melt the solder quickly enough to let you pull the chips. I've never tried it, as in most of the jobs I do, the board is by far the more valuable part.

>
>What is a good source to find info on these chips?

Manufacturers data books. They cost about $10 each, so buying enough to cover all the chips you are likely to meet is non-trivial. Sometimes you can find old copies being cleared out (say by companies or universities), and they'll give them to you. No good for the latest stuff, but great for things like Z80's, TTL, etc

>
>Tom Dengler - KE4IRV
>denglet1@iia.org
>
> * SLMR 2.1a *
>
-tony

Bristol University takes no responsibility for the views expressed in this posting. They are the personal views of the user concerned.

1165. Re: What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 19:51:49 UTC
From: kchen@apple.com
Message-ID: <2r5ugl$po8@apple.com>
Source record: 117805

denglet1@iia.org (Tom Dengler) writes:

>I have about 40 or so old circuit boards with some socketed chips that I
>was wondering what they might be good for. Can anyone can give me a
>brief functional description of these chips?
>
>[1] AM2910BPC - 40 pin - 3 of these on each board.
> 8405DM
>
>[2] AM2910DC - 40 pin - One of these, is this the same as the
> 8345DM prior chip [1]? Is the 8345DM just a date?

AMD microcode controllers for the 4-bit 2901 bit-slice and 16-bit 2903
series bipolar CPUs. The 2901, if memory serves, first appeared in
the early '70 or mid-70. The 2903 late-ish 1970s.

Don't confuse these with the 29000 family, which are embedded RISC
processors that came much later.

Around 100 ns per instruction, plus or minus how much extra you paid.
Much harder to program than standard processors of its generation, even
the 8080 and 6502 from them days. I don't know many people who wrote
microcode for the 2900 who are still sane :-). At Stanford, they made
grad students (me) do it. We were using these to build fast FFT machines
to look for Extraterrestrial Intelligence. No one answered our CQ DXx :-).

The "8405" sounds like the chip was packaged on the 5th week of 1984
and the "8345" indicates the 45th week of 1983.

>[4] N82S147N - 20 pin - 5 per board. with these additional
> second line numbers: D1N 48 REV A
> ...

These are either Signetics bipolar fusable-link ROMS or bipolar RAMs.
I no longer remember which the 147 is; too many cosmic ray hits on my
own memory cells. The fuses of early batches of these ROMs had the
irritating tendency to grow back. Who knows, by now, you may be able
to use the chips on your board as if the fuses are fresh :-) :-).

Just kidding, they did grow back, but quite rarely.

>[6] TMS - 24 pin - See through window on top
> 2516JL-35
> MFP8401

Sounds like Texas Instruments' version of the 2716 EPROM, 350 ns
access time. 8401 again a date code - 1st week, 1984. Do you see a

TI logo (little map of the Republic of Texas) on it? 16 kilo bits
(no, not bytes -- we are talking about the stone age, remember?)
worth of erasable memory. I don't completely remember now, but there
was something quirky about the 25xx series. Was it that it needed
a +12 volt supply in addition to +5 volt?

Maybe you can use these parts to build a spark transmitter. Read
the issue of the Spring '94 "Communications Quarterly" that just came
out if you want hints on how to build a modern spark transmitter (oops,
I hope I didn't wake Jeff, NH6IL, up from his lounging on the Waikiki :-).

73 es happy tinkering,

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

1166. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 21:57:45 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2r65sp$l26@ohlone.kn.PacBell.COM>
Source record: 117806
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

mpaul@unlinfo.unl.edu wrote:

```
: ----------------------------------------------------------------------
: This is the circuit for a simple FM wireless microphone, published in
: the 1990 Radio Electronics "Electronics Experimenters Handbook", pp.
: 155-157. It's simple and handy to have - pretty much the same as the
: "Mr. Microphone" they sell (or used to) at Radio Shack. Range of maybe
: 100 feet, on standard broadcast FM receivers.

: ___ ____________________________________________________________
: \|/ ___ ) | | | | | |
: | --- ) R ___ R R | -----
: |_||__| C10 ) L1 4 --- C3 5 7 | ---
: || | ) | | | | ___ C6 ----- B1
: C1 ------- | | | | --- --- 9VDC
: |_____ | | C9 __R6__ ---- | |
: | \ Q1 | | | | | | | |
: | \|______|_______|__|(__| Q2 | R | | |
: ___ /| | | |( \ | C5 8 | | |
: C2 --- / BF199 | | \|___|__|(___| _+_ | |
: |____V R | /| |( | --- | o
: | 2 ___ / BC183C | | C7 | \
: | | C4 --- V | | | \ S1
: R | | |_______ MIC / \ | | \
: 1 | | | | \_/ | | O
: | | | R _+_ | | | |
: | | | 3 --- C8 | | | |
: | | | | | | | | |
: ----------------------------------------------------------------------

: R1 = 100 ohms C1 = 1.5 pf cer. disc Q1 = BF199, NTE 229,
: R2, R4 = 10K ohms C2 = 100 pF, NPO ECG 229 or eq.
: R3 = 1K ohms C3, C4 = 330 pF NPO Q2 = BC183C, NTE199
: R5, R7 = 47K ohms C5, C9 = .1 uF NPO ECG 123AP or eq.
: R8 = 4.7K ohms C6 = .001 uF NPO L1 = approx. 1 uH
: M1 = electret mike C7 = 22 uF electrolytic S1 = SPST switch
: B1 = 9V battery C8 = 6.8 uF electrolytic
: C10 = 10 - 40 pF trimmer capacitor.

: The coil L1 is so small that in the PC board version of this, it's just a coil
: etched on the board with traces. I think I breadboarded it with about four or
: five turns of bell wire around a pencil and that made about the right value.
: You tune the sucker with the adjustable cap C10. If I remember, the
: transistors are garden variety ones, though I think Q1 was reasonably high
```

: frequency. I was feeding in a signal other than an electret microphone.
: This is neat to use with a cheapo FM walkman-type radio for cheap telemetry.
: (We were actually going to build a device to transmit strain gauge signals
: from someone's teeth over a whole day's time, and it was to be small enough
: to be relatively unnoticed INSIDE THEIR MOUTH the whole time. Never did
: get the O.K. to proceed with that one. Working for university research
: gets pretty strange sometimes.)

: Paul Marxhausen University of Nebraska - Lincoln
: Engineering Electronics Shop

There are some major component errors in this schematic. The R5 and R7 should be more like 4.7K and not 47K. The value of the RF tank coil is stated to be 1 uH, but it should be more like .08 uH, however the winding instructions are about right. The value for R6 is missing from the parts list. It should be in the hundreds of K to 3 Meg range, whatever sets the voltage of the collector to 4 or 5 volts. There is no preemphasis on this circuit, so it will sound muffled on the receiver. It would be a good idea to check the following months of the magazine for circuit error corrections on this project, however, some magazines don't even bother to publish them ("we don't make mistakes").

--
@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@@

1167. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 22:06:54 UTC
From: jlundgre@kn.pacbell.com
Message-ID: <2r66du$l26@ohlone.kn.PacBell.COM>
Source record: 117807
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

A followup to my followup on the FM transmitter. The two transistors are hard to find anywhere, I guess the numbers are euro speak. But the audio transistor for the microphone can be a 2N3904, available at Ratio Shaft. The Rf transistor can also be a 2N3904, but it should not be run at the current that this circuit allows. The emitter resistor should be increased from 100 ohms to 220 or 330 ohms to reduce it. THe 2N2222A or PN2222A can also be used here. It's R-S cat no. 276-2009. The 2N3904 is 276-2016. I have some reservations about the RF stage, because it doesn't have some small capacitors to swamp out the transistor capacitance. This means that the transmitter will drift with temperature changes.

```
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@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ STD DIS- @
@ Rancho Santiago Community College District @ CLAIMERS @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ APPLY... @
@ VOI (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@kn.pacbell.com \ jlundgr@eis.calstate.edu @ @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
```

1168. if filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-15 22:37:33 UTC
From: spbachhu@mtu.edu
Message-ID: <2r687d$k2o@maxwell2.ee>
Source record: 117808

For some time now, I have been trying to modify an FM broadcast band tuner I have to make it super-selective. My problem is that I can't get the ajacent channel selectivity I need using ceramic filters. I have enough gain in my IF stage that I can cascade quite a few of the things, but I still can't get enough selectivity without cutting into the passband I need.

So, this is my question: Does anyone know of a source of say, crystal filters or any other filters that could give the selectivity I need. The center freq. is 10.7 mhz and the bandwidth is 200khz for those who aren't familiar with FM tuners. Any help is appreciated.

Stephen P Bachhuber
spbachhu@mtu.edu

1169. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 00:56:11 UTC
From: cmoore@ilx018.intel.com
Message-ID: <2r6gbb$d31@chnews.intel.com>
Source record: 117809
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

David Billsbrough (kc4zvw@stardust.oau.org) wrote:

: I received my development kit yesterday and am impressed with the contents.
: While it comes with a debugger, I wonder if any assembler or compiler for
: the 80C51 could be used with it?
: David Billsbrough kc4zvw@stardust.oau.org

I have used the Frankenstein 8051 assembler and it does a good job. I'm
sure the debugger will work with the file.hex output. See the 8051.FAQ
for availability of public domain assemblers. Haven't heard of a public
domain compiler yet.

73, KG7BK, CecilMoore@delphi.com

1170. professional radio communications

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 01:28:34 UTC
From: martinb@nosc.mil
Message-ID: <1994May16.012834.9376@nosc.mil>
Source record: 117812

Professional Radio Communications Internet Mailing List

RadioCommNet is a mailing list for professionals in
the radio communications industry: working engineers,
academic faculty, and students. Topics include:
propagation, antenna design, circuit design, modulation
techniques, coding techniques, and so forth.

This mailing list is for topics of professional interest
only. Hobby-related topics should remain on the
rec.radio.amateur.* newsgroups.

The message volume is presently rather low, and so
your mailbox will not be filled up with messages
in which you have no interest. The signal/noise
has been quite high.

We have about 180 members from over a dozen countries.
If you would like your name to be added, please send
me a message. Please include some information about
your occupation: company/university, function, and
"what you do."

Brett F. Martin
Naval Command, Control, and Ocean Surveillance Center
RDT&E Division
San Diego CA

email: martinb@cod.nosc.mil

NOTE: My address is "martinb" rather than "martin"

1171. Re: What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 06:38:12 UTC
From: bnowak@unixg.ubc.ca
Message-ID: <bnowak.769070292@unixg.ubc.ca>
Source record: 117810

>I have about 40 or so old circuit boards with some socketed chips that I
>was wondering what they might be good for. Can anyone can give me a
>brief functional description of these chips? I presume they are coming
>from something like a mainframe modem. If so, it would be nice to build
>some ham modems if posible, or perhaps a PC controlled antenna for
>tracking satellites. Or are they destined to be a very small boat
>anchor? I hate to throw them away, I am sure they would like to do some
>more digital work.

>[1] AM2910BPC - 40 pin - 3 of these on each board.
> 8405DM

>[2] AM2910DC - 40 pin - One of these, is this the same as the
> 8345DM prior chip [1]? Is the 8345DM just a date?

>[3] Z80A CPU - 40 pin - I know this is a Z80? What is a good
> source of playing with this chip?

>[4] N82S147N - 20 pin - 5 per board. with these additional
> second line numbers: D1N 48 REV A
> D0N 48 REV A
> HP0N48 R A
> HP1N48 R A
> HP2N48 REV.A

>[5] MB7124E - 20 pin - 1 per board
> HP3N48RA

>[6] TMS - 24 pin - See through window on top
> 2516JL-35
> MFP8401

>There are also a gadzillion soldered chips on the boards. Mostly 74
>series hex inverters, gates, etc. which I do have info on from the TLL
>cookbook. What is a good way to remove these guys if I wanted to?

This may be a little hard to believe, but I use a propane soldering torch; yes
torch not an iron. Actualy a heat gun is better but a torch will suffice.
I have use this method to remove thousands of ics, and other components
from PC boards and have about and 60-70 % success rate.

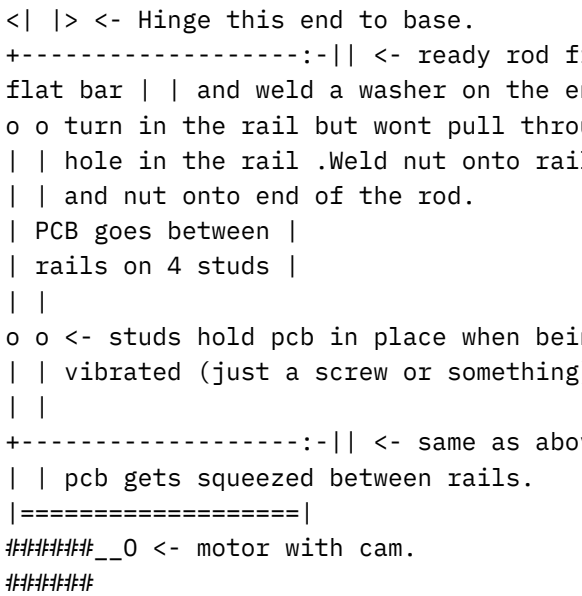
Method :
drill holes in board along edges, preferabley in the corners.
place board on to a jig that you have made from metal (what ever kind
that you can work with) . details on this jig will be explained later.

run torch flame along the back side (solder side) of board slowly and steadily (try to heat the board up gradualy at first, to avoid stressing the part).

at the same time vibrate the hell out of the board. my jig has a motor with a cam attached to it that does this for me.

chips and components fall off the other side like mad. Even smt parts if you are carefull .

the JIG:


<| |> <- Hinge this end to base.
+-------------------:-|| <- ready rod file threads off one end
flat bar | | and weld a washer on the end so it will
o o turn in the rail but wont pull through
| | hole in the rail .Weld nut onto rail,
| | and nut onto end of the rod.
| PCB goes between |
| rails on 4 studs |
| |
o o <- studs hold pcb in place when being
| | vibrated (just a screw or something).
| |
+-------------------:-|| <- same as above. tighen two nuts and
| | pcb gets squeezed between rails.
|====================|
#######__O <- motor with cam.
#######

Hope this can help, it works ok for me.

>What is a good source to find info on these chips?

>Tom Dengler - KE4IRV
>denglet1@iia.org

> * SLMR 2.1a *
>
--
73
de VE7QBN

Brad Nowak

1172. VHF to UHF - Best design ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 08:41:21 UTC
From: elendir@enst.fr
Message-ID: <2r7bjh$mq2@cismsun.univ-lyon1.fr>
Source record: 117811

Hello again,

I�m still involved in that multimode VHF/UHF TRX. To actually translate
VHF to UHF, I thought about a threefold frequency multiplier in series with
the VCO. Then mixing. So, if you don�t activate the x3, you get VHF and if
you do you get UHF.
But there is also the solution of generating VHF anyway then translating
with a ~290 MHz carrier to get UHF. (Simplifies filtering)

Which solution, according to you, is best ?

Also, is it possible to find sharp filters for the 2 m and 70 cm band ?

Thanks and 73,
Vince - F1RCS.

--
ENST - Ecole Nationale Superieure des Telecommunications, Paris, France

1173. Re: Ten-Tec 1208 transverter kit - schedule update

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 12:01:19 UTC
From: Erich Franz Stocker <stocker@spsosun.gsfc.nasa.gov>
Message-ID: <2r7naf$o5a@paperboy.gsfc.nasa.gov>
Source record: 117813

In article <dgfCprE3C.A39@netcom.com> David Feldman, dgf@netcom.com writes:
> As of today 5/13/94 Ten-Tec says of the 6M transverter kit that the manuals are
> being proofread currently, and shipment expected 7/10 days from now.
>
> E openings going a-wasting :-(
>
> 73 Dave WB0GAZ dgf@netcom.com

Could someone email me the address of Ten-Tec. I am definitely interested in
the 6m transverter kit.

* Erich Franz Stocker *
* N3OXM *
* stocker@spso.gsfc.nasa.gov *
* *
* My ideas are my own and do not represent*
* the opinions of the federal government, *
* NASA or Goddard Space Flight Center. *

1174. Jackson tube tester

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 17:18:01 UTC
From: jal@cray.com
Message-ID: <1994May16.121801.8851@ned.cray.com>
Source record: 117817

I bought a Jackson Model 103 Dynamic Tube Tester at a garage sale recently, it's suppose to work, just missing some knobs.

I was wondering if anyone might have any information on this tester.

Please email me direct.

Thanks in advance,


```
-------------------------------------------------------------------------------
/`-_ Jim Lindberg | You should have seen them run,
{ . }/ Cray Research Inc. | When they found it was a waterhole
\ / Chippewa Falls, WI 54729 USA | And they were looking for alcohol.
|___| jal@cray.com | -Groucho Marx
-------------------------------------------------------------------------------
```

1175. Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 18:46:32 UTC
From: btbg1194@uxa.cso.uiuc.edu
Message-ID: <2r8f28$ha2@vixen.cso.uiuc.edu>
Source record: 117815
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

Newsgroups: uiuc.org.synton
Subject: Somebody named Loomis invented radio?
Date: 1 May 1994 02:01:51 GMT
Organization: University of Illinois at Urbana

I read something recently that a man named Loomis might have
"invented" radio in the late 1800's before Marconi & Hertz et al.

This might be an ancestor of the person for whom the University of
Illinois physics department "Loomis Lab" is named.

Does anybody else know more about this?

kb8cne, Brad

--
Brad Banko; Univ of Illinois; b-banko@uiuc.edu
As much as our network and systems are loaded, the US Mail is often faster. :-)
See one. Do one. Teach one. 73 de kb8cne @ n9lnq.il
--
Brad Banko; Univ of Illinois; b-banko@uiuc.edu
As much as our network and systems are loaded, the US Mail is often faster. :-)
See one. Do one. Teach one. 73 de kb8cne @ n9lnq.il

1176. post QRP-Digest here?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 19:51:34 UTC
From: bruce@Think.COM
Message-ID: <2r8is6INNfm@early-bird.think.com>
Source record: 117814

As some of you know, I administer an Internet mailing list devoted to QRP. Since there is much cross-interest among the QRP crowd and homebrewers, someone suggested that I post the daily digests from the QRP list to this group (one message each night) on an experimental basis.

Note that I am *not* planning to feed the messages from this newsgroup into the QRP list; if you want to reply to a topic on the list, you will have to mail to the specific recipient or to the mailing list as a whole.

If you have strong feelings one way or another, please let me know in private mail.

If you just want to join the QRP mailing list, send a "subscribe qrp" or "subscribe qrp-digest" message to majordomo@think.com, not to me personally!!

--
--Bruce Walker
Thinking Machines Corporation, Cambridge, MA
bruce@think.com; +1 617 234 4810; Aviation: PP-ASEL; Radio: WT1M

1177. ?? Need help with an external short wave radio antenna ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-16 20:18:10 UTC
From: salavi@unity.ncsu.edu
Message-ID: <2r8ke2$kqc@taco.cc.ncsu.edu>
Source record: 117816
Cross-posted to: rec.radio.amateur.misc,rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

I need to gather some info on building an antenna for short wave reception? Please excuse my ignorance, I am very new at this. Someone told me that All I need to do is connect a very long thin wire from an adjacent tree to the house and one from the ground and connect them into the adapter that goes into the external antenna plug. I have some questions:

1) How long should this wire be? Is it somehow related to the frequencies that I am interested in? What if I am interested in more than one?

2) should the wire be shilded or unshielded?

3) what should be the gauge of the wire? The thicker the better?

4) should the wire be the meshed type or a single thread?

>>> Please include this message for reference <<<
====== S. Alavi [salavi@unity.ncsu.edu] (919)467-7909 (H) ========
(919)856-3817 (W)

1178. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 07:22:12 UTC
From: johnh@macadam.mpce.mq.edu.au
Message-ID: <2r9rb4$rrl@sunb.ocs.mq.edu.au>
Source record: 117727
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

In article <2r1lat$d52@darkstar.UCSC.EDU>, lance@shoppe.UCSC.EDU (Lance Bresee) writes:

...

|> >I received my development kit yesterday and am impressed with the contents.
|> >While it comes with a debugger, I wonder if any assembler or compiler for
|> >the 80C51 could be used with it?
|> >
|> I am also interested in the answer to this question.
|> Also, are there c compilers for the 80c51 series?
|> I have a project in mind for the 8xc752, but the
|> math is a problem for the assembly code.
|>
|>
Yes, there are - I'm using an Australian 8051 cross compiler (DOS hosted)
now (from a company called HiTech in Queensland - hitech@hitech.com.au).

Keep a lookout for the 8051 faq, which is posted monthly, or if you can't
wait, drop me a line and I'll mail you a copy of the April release.

JohnH

| _ |_ _ |_| _ _| _| Electronics Department
|_| (_) | | | | | (_| (_| (_| \/ School of MPCE
---------------------------------/- Macquarie University
Sydney, AUSTRALIA 2109

Email: johnh@mpce.mq.edu.au, Ph: +61 2 805 9090, Fax: +61 2 805 9128

1179. Re: ?? Need help with an external short wave radio antenna ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 08:50:19 UTC
From: R0264@vmcms.csuohio.edu
Message-ID: <16FB93603.R0264@vmcms.csuohio.edu>
Source record: 117719
Cross-posted to: rec.radio.amateur.misc,rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

I need to gather some info on building an antenna for short
wave reception? Please excuse my ignorance, I am very new at
this. Someone told me that All I need to do is connect a very
long thin wire from an adjacent tree to the house and one from
the ground and connect them into the adapter that goes into the
external antenna plug. I have some questions:

1) How long should this wire be? Is it somehow related to the
frequencies that I am interested in? What if I am interested in
more than one?

2) should the wire be shilded or unshielded?

3) what should be the gauge of the wire? The thicker the better?

4) should the wire be the meshed type or a single thread?

>>> Please include this message for reference <<<
====== S. Alavi [salavi@unity.ncsu.edu] (919)467-7909 (H) ========
(919)856-3817 (W)
It does not make much difference on most of what you ask. Almost any
kind of wire will work. Get at least about 50 feet outdoors and up high.
------ Phil Emerson.

1180. HELP! - Sharp PC-6200 lcd & docs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 09:08:22 UTC
From: fmitch@netcom.com
Message-ID: <2r9cru$aan@sundog.tiac.net>
Source record: 117718
Cross-posted to: uk.radio.amateur,rec.radio.swap,rec.radio.amateur.space,rec.radio.amateur.policy,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.digital.misc,rec.radio.amateur.antenna,aus.radio.packet,aus.radio.amsat,aus.radio

hi, mitch wa4osr here in mobile, alabama...

my sharp pc-6200 was dropped and the lcd display
was damaged... upon taking the display apart, one
of the surface mount column drivers was cracked...
rendering the display unusable... therefore,
i am in desperate need of the lcd display panel...
the part numbers on the display panel are LM64N671
and 90D13145W ... both numbers are on the panel...
my pc-6200 is actually a pc-6220, which
i think indicates that it has a 20 mb hard drive...

i bought the pc-6220 used with absolutely *NO* docs...
it has the 2400 baud internal modem... i need *ANY*
info, but especially would appreciate a copy of the
owner/operator manual... i will gladly pay for
copies/postage...

if anyone can help with a source of the lcd panel or
with the docs please email me or call me collect
at the below numbers...

thanks for any help/leads...

mitch, wa4osr

fmitch@netcom.com
205-476-4100 work
205-342-7259 home
11 Midtown Park, E.
Mobile, AL 36606

1181. Thanks for Ten-Tec Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 10:51:53 UTC
From: Erich Franz Stocker <stocker@spsosun.gsfc.nasa.gov>
Message-ID: <2ra7k9$dkt@paperboy.gsfc.nasa.gov>
Source record: 117720

Thanks to all of you who sent me the information about
Ten-Tec. I especially appreciate receiving the 800
number.

73,Erich

****
* Erich Franz Stocker *
* N3OXM *
* stocker@spso.gsfc.nasa.gov *
* *
* My ideas are my own and do not represent*
* the opinions of the federal government, *
* NASA or Goddard Space Flight Center. *
****

1182. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 14:57:49 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994May17.145749.20098@kocrsv01.delcoelect.com>
Source record: 117722
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <2r8f28$ha2@vixen.cso.uiuc.edu>, btbg1194@uxa.cso.uiuc.edu (Bradley T Banko) writes:
[...]
> I read something recently that a man named Loomis might have
> "invented" radio in the late 1800's before Marconi & Hertz et al.
[...]
> Does anybody else know more about this?
[...]

Dr. Loomis was a dentist. If I remember correctly, he used a non-powered system where he simply connected his "transmitting" antennae to ground via a telegraph key. I assume that at all time a very small potential difference existed between the antennae and ground, when the key opened and closed, a small current flowed and excited the antennae at its resonant frequency. I'm not sure what he used as a detector, but it did work.

I read about this in one of the ham magazines over ten years ago, so I can't remember all the details.

Often you can see this effect with a TV set. Connect a set of rabbit ears to a TV set and tune in a weak station. One that is right on the verge of snow, but not too bad. Then cut a metal rod to about 1/4 wave at the appropriate frequency. Hold this rod in the plane of the rabbit ears (same polarization) and tap the rod with a metal screwdriver. Many times you can get "sparkles" in the picture by doing this.

--
Jim Buchanan N9SDV
c22jrb@kopt0017.delcoelect.com (Does the "c22" stand for "catch 22"?)
c22jrb@delphi.com

1183. Where can I obtain Millen high voltage connectors?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-17 18:34:56 UTC
From: dgf@netcom.com
Message-ID: <dgfCpyMA8.Luw@netcom.com>
Source record: 117723

I'm trying to find a source for Millen-type (or real Millen) high voltage connectors - they're a single conductor plastic body connector used on ends of the cable between a high power tube amplifier & it's power supply.
Name and/or telephone number of vendor(s) greatly appreciated.

73 Dave WB0GAZ dgf@netcom.com

1184. What I need..and I am looking for..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 03:59:54 UTC
From: Cynthia.Shea@f40.n382.z1.fidonet.org
Message-ID: <769238189.AA01120@afarm.uucp>
Source record: 117721

Ben,

I will need to acquire a portable VHF data radio and packet connector before I can do anything. If you know of anyone that is selling either of these, please tell them to send me a message of what they are selling and how much it is selling for. I will try to buy from people that Joe Thiel would be willing to buy from.

I am a programmer for the Health Department. I probably will not have any problems connecting the equipment together, and to my computer. I have already assembled (built it) and configured (setup CMOS, etc.) my IBM 386DX. I think the only problem that I will encounter will be in configuring software between each piece so that I can connect to the internet. I will be able to get all of the assistance I need from Joe. If I need any more assistance, I will send you a message. I have an account on internet via the Health department. Do you mind if people access A. Farm via the internet? Can I access A. Farm Via the internet?--I can ask Joe, but since I am writing this message, I will just ask you.

Do you want scanned color images placed on your BBS? These images do take up room, even in the compressed and 16color format. I have a scanner, and I can scan in a image for you. As for programs etc for uploading, What are you interested in. I might have something you would want, or can generate something that does the same thing. I will be restricted by my work demands and I cannot give you anything that would look like it could have come from my work (even if I created the code).

Well, I must get some work done. I also need to study for the Amateur Radio Exam.
Cynthia

1185. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 04:58:28 UTC
From: wolf@beta.lanl.gov
Message-ID: <2rc79k$f6a@newshost.lanl.gov>
Source record: 117745
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <1994May17.145749.20098@kocrsv01.delcoelect.com> c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
>
>[...]
>
>Dr. Loomis was a dentist. If I remember correctly, he used a non-powered
>system where he simply connected his "transmitting" antennae to ground via
>a telegraph key. I assume that at all time a very small potential
>difference existed between the antennae and ground, when the key opened and
>closed, a small current flowed and excited the antennae at its resonant
>frequency. I'm not sure what he used as a detector, but it did work.

possibly the first case of the reception of rf by one's dental work ! :-))

david r. wolf - wb4vcq

1186. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 05:46:35 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994May18.054635.16316@ke4zv.atl.ga.us>
Source record: 117724
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <1994May17.145749.20098@kocrsv01.delcoelect.com> c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
>In article <2r8f28$ha2@vixen.cso.uiuc.edu>, btbg1194@uxa.cso.uiuc.edu (Bradley T Banko) writes:
>[...]
>> I read something recently that a man named Loomis might have
>> "invented" radio in the late 1800's before Marconi & Hertz et al.
>[...]
>> Does anybody else know more about this?
>
>Dr. Loomis was a dentist. If I remember correctly, he used a non-powered
>system where he simply connected his "transmitting" antennae to ground via
>a telegraph key. I assume that at all time a very small potential
>difference existed between the antennae and ground, when the key opened and
>closed, a small current flowed and excited the antennae at its resonant
>frequency. I'm not sure what he used as a detector, but it did work.

Loomis took advantage of the roughly 300 volts/meter potential in the atmosphere to activate his transmitter. The current flow is small, except during thunderstorms, but it was sufficient to generate a detectable signal at a distance in the days before widespread use of electricity.

Nathan B. Stubblefield's work was much further advanced. He sent *voice* signals over distances greater than 30 miles before Marconi et al sent spark signals. His system was powered by batteries and apparently worked on the principle of sheet conductance. (He was very secretive about the exact details.) He conducted a demonstration for Congress where he communicated by voice with a ship in the Potomac from the shore. His was the first "underground" radio station.

And of course there was Tesla. He had radio controlled boats operating in the lake of Central Park in one demonstration well before Marconi generated his first sparks. Tesla was fasinated by resonance phenomina.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1187. Drake MN2000 to 160 meters-- Anyone done it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 10:47:54 UTC
From: YVES ALBERT <yves1@delphi.com>
Message-ID: <xI+OFFK.yves1@delphi.com>
Source record: 117725

Anyone have a ny experience adding 160 capability to a Drake MN2000 antenna tuner? (aside from external components) any help would be appreciated.
Thanks!
73 Yves (Al) Feder W1EOX

1188. Digital Delay Circuit Ideas?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 13:31:51 UTC
From: jra@lawdept.daytonOH.ncr.com
Message-ID: <jra.126.00088822@lawdept.daytonOH.ncr.com>
Source record: 117726
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I'm designing a clock to be driven by my local frequency standard. My goal is to be able to set the second mark to better than 1 millisecond (and I hope eventually much better than that).

To do this, I need to build a variable delay that I can use to slew the seconds marker. Actually, I'll need a couple of delays, starting at a higher frequency for fine adjustment, and finally running at a lower one for course adjust. Obviously, for stability reasons I want to do this digitally and not with some sort of analog delay.

Any suggestions on CMOS devices (probably a presettable counter?) that would work well here? The larger the count range in a single chip, the better.

Thanks...

John AG9V
jra@lawdept.daytonOH.ncr.com

1189. Re: Where can I obtain Millen high voltage connectors?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 14:18:04 UTC
From: tomb@lsid.hp.com
Message-ID: <Cq0525.Kwx@hpcvsnz.cv.hp.com>
Source record: 117728

David Feldman (dgf@netcom.com) wrote:
: I'm trying to find a source for Millen-type (or real Millen) high voltage
: connectors - they're a single conductor plastic body connector used on ends of
: the cable between a high power tube amplifier & it's power supply.
: Name and/or telephone number of vendor(s) greatly appreciated.

You might try the "SHV" or "MHV" series of connectors. They look a
little like BNC, but are rated at 5000 volts peak, 5 amps, to 50MHz.
They are for coaxial cable, which is a decent idea at high voltages
anyway: I've always felt a little more comfortable with a grounded
barrier between me and the high voltage. But the connectors in this
series are pricey. Newark, for example, lists them.

There's also a fairly standard connector used on HeNe lasers, but it
may not be rated for the current you want to use. Try laser supply
places (Meredith in Phoenix??) for these.

Is Millen still in business??

1190. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 17:47:10 UTC
From: billw@glare.cisco.com
Message-ID: <BILLW.94May18174710@glare.cisco.com>
Source record: 117733
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

The 8XC750 is in the same class as a MicroChip PIC (like a 16C55)
except that it can run at 40Mhz, has a somewhat more complex
instruction set, and more i/o pins in the skinny DIP package.

Beware: Mhz are not directly comparable. Those "more complex instructions"
take a lot more cycles to execute as well. Most instructions take 12 clock
periods, and a fair number take 24. So a 12Mhz executes most instructions
in one microsecond, while a 20Mhz PIC executes most instructions in 200nS.

BillW

1191. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 18:30:02 UTC
From: cmcmanis@Sun.COM
Message-ID: <2rdmra$gdh@handler.Eng.Sun.COM>
Source record: 117729
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

David Billsbrough (kc4zvw@stardust.oau.org) wrote:
: There is a Philips Dream Machine 8XC750 design contest.

I got my DS-750 toolkit (I know, another in a series of nanocomputers)
and was very favorably impressed. The 8XC750 is in the same class as
a MicroChip PIC (like a 16C55) except that it can run at 40Mhz, has
a somewhat more complex instruction set, and more i/o pins in the
skinny DIP package. I also got the MicroChip kit when they were
doing their design contest, the Phillips one beats that by quite a
bit.

The Phillips DS-750 kit includes:
(2) 8xC752 samples (used to emulate a 8xC750)
(1) 8xC750 sample
(1) serial cable
(1) Wall bug type power supply
(1) Assembler/Simulator/Debugger package (MS DOS)
(1) Programmer/Emulator - Programs 750/1/2 parts, emulates 750
parts.
(1) Manual (copyright March 1994!)
Nice plastic binder/box for storage.
Phillips 8x51 series databook
Phillips Application Notes

Unlike the PICSTART-16B which contained the programmer, no emulator, no
serial cable, no powersupply, and no box to keep it in.

Anyway, my suggestion for anyone who is playing around with small dedicated
processors is to not miss this deal.

--
--Chuck McManis All opinions in this message/article are
FirstPerson Inc. those of the author, who may or may not
Internet: cmcmanis@firstperson.COM be who you think it is.

1192. Re: Where can I obtain Millen high voltage connectors?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 19:01:46 UTC
From: dave@diusys.cms.udel.edu
Message-ID: <2rdomq$7hh@news.udel.edu>
Source record: 117730

David Feldman (dgf@netcom.com) wrote:
: I'm trying to find a source for Millen-type (or real Millen) high voltage
: connectors - they're a single conductor plastic body connector used on ends of
: the cable between a high power tube amplifier & it's power supply.
: Name and/or telephone number of vendor(s) greatly appreciated.

: 73 Dave WB0GAZ dgf@netcom.com

Radio Kit used to carry these, I think.

PO Box 973
Pelham, NH 03076

(603) 635-2235

Might be worth a try. Good Luck, Dave WA3U

1193. Re: Where can I obtain Millen high voltage connectors?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 19:10:45 UTC
From: dgf@netcom.com
Message-ID: <dgfCq0ILy.AoD@netcom.com>
Source record: 117732

In article <Cq0525.Kwx@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>David Feldman (dgf@netcom.com) wrote:
>: I'm trying to find a source for Millen-type (or real Millen) high voltage
>
>Is Millen still in business??

A friend of mine gave me the phone # of 508 975 2711 for millen, and lo and behold, they're still in business! 73 Dave WB0GAZ dgf@netcom.com

1194. Repeater linking, what radios?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 20:34:49 UTC
From: david@lambton.on.ca
Message-ID: <Cq0MI2.5up@lambton.on.ca>
Source record: 117731

We are are thinking of upgrading our 2m repeater to include some
remote recievers, linked back on 70cm and selected through a
Doug Hall Electronics voter.

What is the general wisom as to sources of link recievers/transmitters
what to use for remote (cross band) repeaters, expected ranges,
power level, etc?

I think that a Kenwood 732 would make a cheap remote site, if it
was set to low power it could probably handle the duty cycle.
A small brick could boost the power.

We still need recomendations on recievers that have fixed audio
and COS outputs, and are rugged enough for this use. Synthisized (sp?)
would be nice.

Has any one tryed this? Ideas?

73 de Dave

David Grant VE3DGR david@lambton.on.ca
Lambton College, Sarnia, ON CANADA +1 519 542 7751 x348

1195. Re: Ham-Homebrew Digest V94 #129

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-18 21:32:40 UTC
From: lmelton@paul.spu.EDU
Message-ID: <Pine.3.89.9405181450.A18449-0100000@paul.spu.edu>
Source record: 117740

In response to the question about telephone voltages in Europe....

I just returned from a 3 yr stay in Italy and used our U.S. phones
without problems. If that helps... they are probably the same.

Lyle

****
Lyle D. Melton
School of Health Sciences
Seattle Pacific Univ
Seattle Washington
lmelton@spu.edu
****

1196. Re: Repeater linking, what radios?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 03:14:37 UTC
From: bobw@col.hp.com
Message-ID: <2relit$1qp@hp-col.col.hp.com>
Source record: 117734

David Grant (david@lambton.on.ca) wrote:

: I think that a Kenwood 732 would make a cheap remote site, if it
: was set to low power it could probably handle the duty cycle.
: A small brick could boost the power.

I'd be real concerned about the receiver performance on the 732.
It's not all that good for general mobile use and on a radio
site, it would be even worse (unless its way out in the boonies
where this is zero RF).

Page 58 of the manual says:
Caution This equipment can be extremely susceptible to lightning
strike damage or intermodulation distortion if it is
operated on mountain top locations.

I guess you could protect it with bandpass cavities or helical filters.

Bob Witte / bobw@col.hp.com / Hewlett Packard PMO / KB0CY / (719) 590-3230

1197. Re: Repeater linking, what radios?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 05:16:40 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994May19.051640.533@ke4zv.atl.ga.us>
Source record: 117736

In article <Cq0MI2.5up@lambton.on.ca> david@lambton.on.ca (David Grant) writes:
>
>We are are thinking of upgrading our 2m repeater to include some
>remote recievers, linked back on 70cm and selected through a
>Doug Hall Electronics voter.
>
>What is the general wisom as to sources of link recievers/transmitters
>what to use for remote (cross band) repeaters, expected ranges,
>power level, etc?

Motorola and GE are always good choices. Micors and Exec IIs can be split with a VHF receiver and a UHF transmitter in one case. This makes a nice bulletproof remote. Or you can use purpose designed link equipment from Neulink or Grainger. The link should be at the lowest power that gives adequate fade margin. Beams are highly recomended. Use of microwave links instead of 70 cm is highly recomended since the link segment of 70 cm is filling beyond capacity in many areas. Grainger 900 MHz link transmitters and receivers are good, or you can go higher with equipment from Linkhurt, M/AComm, or Motorola.

>I think that a Kenwood 732 would make a cheap remote site, if it
>was set to low power it could probably handle the duty cycle.
>A small brick could boost the power.

Horrible choice. The intermod at a good high site will drive this radio crazy. It's transmitter is also dirty enough to generate complaints from other site users. About the only amateur grade equipment that's usable at a high site is the Icom 900/901 band modules, and they aren't really great.

>We still need recomendations on recievers that have fixed audio
>and COS outputs, and are rugged enough for this use. Synthisized (sp?)
>would be nice.

Synthesized would be bad. You want crystal controlled receivers with at minimum TCXOs, and preferably ovens. Stability is critical, and the cleaner LO spectrum of the crystal rigs will also help reject other crud on the site. Watkins Johnson made some great shelf mount single channel receivers for this purpose, but you could press Micor or Exec II receiver strips into service. If you use the split setup I suggested at the remote sites, you'll already have the UHF receivers left over from those. You can put two receiver strips in a single case. COR and fixed audio can be obtained from these receivers in exactly the same way you would if you were using them for ordinary repeater service. Probably 90% of ham repeaters use either the Micor or Exec II. There's a reason for that.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1198. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 06:00:24 UTC
From: cburian@ux4.cso.uiuc.edu
Message-ID: <2rev9o$g3o@vixen.cso.uiuc.edu>
Source record: 117735
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

billw@glare.cisco.com (William) writes:

] The 8XC750 is in the same class as a MicroChip PIC (like a 16C55)
] except that it can run at 40Mhz, has a somewhat more complex
] instruction set, and more i/o pins in the skinny DIP package.

]Beware: Mhz are not directly comparable. Those "more complex instructions"
]take a lot more cycles to execute as well. Most instructions take 12 clock
]periods, and a fair number take 24. So a 12Mhz executes most instructions
]in one microsecond, while a 20Mhz PIC executes most instructions in 200nS.

'Tis true. Perhaps Philips should follow Dallas' lead and reduce the number of clock cycles per machine cycle, instead of just pushing the clock and internals to the limit. (Maybe that's why they made it run up to 40MHz, to make it competitive.)

Nevertheless, I'm glad I've got a skinny-dip 8031-core chip to play with. I'm just miffed that it doesn't have a UART, since just about everything I build talks to my PC via RS-232, and so I'm stuck with low speed and complicated, program space-hogging comm routines.

Chris Burian

1199. Re: What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 08:07:15 UTC
From: Gregory Benjamin <gbenjamin@delphi.com>
Message-ID: <R0zt9Rb.gbenjamin@delphi.com>
Source record: 117754

Get an old copy of the "IC Master" published by Hearst Business Publishing for basic information on virtually any IC chip. These books are about $170 new, and are published annually. You should be able to get a five-year-old copy for next to nothing.

1200. Cobra CB Radio MOD

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 12:09:54 UTC
From: an68991@anon.penet.fi
Message-ID: <121449Z19051994@anon.penet.fi>
Source record: 117737

I understand that there are a number of modifications that can be performed o
the Cobra model 148GTL CB radio, and am interested in obtaining them. I
tried looking at oak.oakland.edu under the /pub/hamradio/mods section but
have not found anything yet.

Thanks for any help!

To find out more about the anon service, send mail to help@anon.penet.fi.
Due to the double-blind, any mail replies to this message will be anonymized,
and an anonymous id will be allocated automatically. You have been warned.
Please report any problems, inappropriate use etc. to admin@anon.penet.fi.

1201. HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 13:15:00 UTC
From: siwasaki@unix1.tcd.ie
Message-ID: <siwasaki.769353300@unix1.tcd.ie>
Source record: 117738
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

Hi,

i just built a 2-transistor, .2 Watt transistor.
I can get pretty good range with it (approx 250 metres) with a 'bad'
set-up ,ie not covered, poor antenna.

I'm looking to build a bigger, more powerful model, and also make
an efficient antenna.

Can anyone give me any information on doing this?
Also can anyone reccomend any TEXTS are transmittor construction,
esp one with circuit diagrams.....

Thanks.

Si.

1202. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 14:29:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <Cq1xEK.DLL@newsflash.concordia.ca>
Source record: 117739
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

>
>Loomis took advantage of the roughly 300 volts/meter potential in the
>atmosphere to activate his transmitter. The current flow is small, except
>during thunderstorms, but it was sufficient to generate a detectable signal
>at a distance in the days before widespread use of electricity.
>
>Nathan B. Stubblefield's work was much further advanced. He sent *voice*
>signals over distances greater than 30 miles before Marconi et al sent
>spark signals. His system was powered by batteries and apparently worked
>on the principle of sheet conductance. (He was very secretive about the
>exact details.) He conducted a demonstration for Congress where he
>communicated by voice with a ship in the Potomac from the shore. His was
>the first "underground" radio station.
>
>And of course there was Tesla. He had radio controlled boats operating
>in the lake of Central Park in one demonstration well before Marconi
>generated his first sparks. Tesla was fasinated by resonance phenomina.
Message-ID: <19MAY199409295316@pavo.concordia.ca>
References: <2r8f28$ha2@vixen.cso.uiuc.edu>
<1994May17.145749.20098@kocrsv01.delcoelect.com> <1994May18.054635.16316@ke4zv.atl.ga.us>
Organization: Concordia University
News-Software: VAX/VMS VNEWS 1.41

Reginald Aubrey Fessenden, a Canadian, actually sent the first voice message
without the help of wires on December 23, 1900 from Cobb Island in the Potomac
river. He also improved Marconi's wireless system, made the first radio
broadcast, and invented sonar. An article appeared in Equinox magazine several
years ago that detailed Fessenden's achievements.
-Mark Hillier Internet: MD_HILL@pavo.concordia.ca
Amateur: VE2HVW
PACKET: VE2HVW@VE2FKB
" I hear, I forget. I see, I remember. I do, I understand"

1203. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 18:06:50 UTC
From: cmcmanis@Sun.COM
Message-ID: <2rg9rq$i0t@handler.Eng.Sun.COM>
Source record: 117741
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

First, I didn't mean to "compare" Mhz. I agree with everyone that they aren't comparable. However I stick by my original statement that the Microchip "PIC" and the 8xC750 are in the same "class". (This is a tautology since I also get to define the term "class" :-)

Christopher J Burian (cburian@ux4.cso.uiuc.edu) wrote:
: 'Tis true. Perhaps Philips should follow Dallas' lead and reduce the number
: of clock cycles per machine cycle, instead of just pushing the clock and
: internals to the limit. (Maybe that's why they made it run up to 40MHz,
: to make it competitive.)

A very good idea that I hope Phillips picks up on, I have the impression though that they got this core loaded up into their ASIC library and now they are whipping out chips right and left. Its much lower risk to stick with a working core.

: Nevertheless, I'm glad I've got a skinny-dip 8031-core chip to play with.
: I'm just miffed that it doesn't have a UART, since just about everything I
: build talks to my PC via RS-232, and so I'm stuck with low speed and
: complicated, program space-hogging comm routines.

Someone else just posted the serial I/O routines for the 8031 and they were pretty small. (Dave Dunfield I believe). I don't mind doing bit-banger routines, but I do mind (on the PIC at least) that I really have to use clever programming to get asynchronous I/O.

--
--Chuck McManis All opinions in this message/article are
FirstPerson Inc. those of the author, who may or may not
Internet: cmcmanis@firstperson.COM be who you think it is.

1204. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 19:07:11 UTC
From: zcapl34@ucl.ac.uk
Message-ID: <1994May19.190711.23607@ucl.ac.uk>
Source record: 117742
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

siwasaki@unix1.tcd.ie (Pleasure Death) writes:

>Hi,

>i just built a 2-transistor, .2 Watt transistor.
>I can get pretty good range with it (approx 250 metres) with a 'bad'
>set-up ,ie not covered, poor antenna.

>I'm looking to build a bigger, more powerful model, and also make
>an efficient antenna.

>Can anyone give me any information on doing this?
>Also can anyone reccomend any TEXTS are transmittor construction,
>esp one with circuit diagrams.....

What frequency?

1205. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 21:22:57 UTC
From: cburian@ux4.cso.uiuc.edu
Message-ID: <2rglbh$muc@vixen.cso.uiuc.edu>
Source record: 117743
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

cmcmanis@Sun.COM (Chuck McManis) writes:

]Christopher J Burian (cburian@ux4.cso.uiuc.edu) wrote:
]: 'Tis true. Perhaps Philips should follow Dallas' lead and reduce the number
]: of clock cycles per machine cycle, instead of just pushing the clock and
]: internals to the limit. (Maybe that's why they made it run up to 40MHz,
]: to make it competitive.)

]A very good idea that I hope Phillips picks up on, I have the impression
]though that they got this core loaded up into their ASIC library and now
]they are whipping out chips right and left. Its much lower risk to stick
]with a working core.

Dallas seems to be the company into unique packaging variations. They say
they're soon going to put onboard memory on their hi-speed 80c320, I suspect
it'll be NVRAM. Maybe they'll forfeit some leads and stick a version in a
skinny dip package. 2K of program memory, a UART & serial programming, and
18-24 pins would be nice.

Chris Burian

1206. HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 22:13:43 UTC
From: nmoss@slacc.com
Message-ID: <010617QBKVRPGQRAACEG@slacc.com>
Source record: 117744

I recommend that you get a copy of the ARRL (American Radio Relay League) handbook (published annually). There are similar publications put out by the amateur radio organizations in other countries as well.

Noel Moss
nmoss@slacc.com

SLACC STACK BBS - St. Louis, Missouri
The bulletin board service of the St. Louis Area Computer Club

+1 314.367.1903

1207. Re: Philips "Dream Machine" 8XC750 design contest

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-19 23:50:38 UTC
From: ddunfield@BIX.com
Message-ID: <ddunfield.769391438@BIX.com>
Source record: 117756
Cross-posted to: sci.electronics,comp.robotics,rec.radio.amateur.homebrew

>Someone else just posted the serial I/O routines for the 8031 and
>they were pretty small. (Dave Dunfield I believe).

I posted these in the new DS-750 mailing list. Here they are for
general consumption. They occupy 47 bytes of code space.

```
*
* "Bit-bang" serial I/O functions for the 8051.
*
* These routines transmit and receive serial data using two general
* I/O pins, in 8 bit, No parity, 1 stop bit format. They are useful
* for performing serial I/O on 8051 derivatives not having an
* internal UART, or for implementing a second serial channel.
*
* Dave Dunfield - May 17, 1994
*
* NOTE that R0 and R1 are used by the functions. You may wish to
* add PUSH/POP instructions to save/restore these registers.
TXD set P1.0 Transmit on this pin
RXD set P1.1 Receive on this pin
* The serial baud rate is determined by the processor crystal, and
* this constant which is calculated as: (((crystal/baud)/12) - 5) / 2
BITTIM EQU 45 (((11059200/9600)/12) - 5) / 2
*
* Transmit character in A via TXD line
*
putc CLR TXD Drop line for start bit
MOV R0,#BITTIM Wait full bit-time
DJNZ R0,* For START bit
MOV R1,#8 Send 8 bits
putc1 RRC A Move next bit into carry
MOV TXD,C Write next bit
MOV R0,#BITTIM Wait full bit-time
DJNZ R0,* For DATA bit
DJNZ R1,putc1 write 8 bits
SETB TXD Set line high
RRC A Restore ACC contents
MOV R0,#BITTIM Wait full bit-time
DJNZ R0,* For STOP bit
RET
*
* Receive a character from the RXD line and return in A
*
getc JB RXD,* Wait for start bit
```

```
MOV R0,#BITTIM/2 Wait 1/2 bit-time
DJNZ R0,* To sample in middle
JB RXD,getc Insure valid
MOV R1,#8 Read 8 bits
getc1 MOV R0,#BITTIM Wait full bit-time
DJNZ R0,* For DATA bit
MOV C,RXD Read bit
RRC A Shift it into ACC
DJNZ R1,getc1 read 8 bits
RET go home
```

Dave Dunfield (ddunfield@bix.com)

1208. Re: Repeater linking, what radios?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 01:09:26 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994May20.010926.3229@vlsi.polymtl.ca>
Source record: 117748

In article <1994May19.051640.533@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>
>Synthesized would be bad. You want crystal controlled receivers with
>at minimum TCXOs, and preferably ovens. Stability is critical, and
>the cleaner LO spectrum of the crystal rigs will also help reject
>other crud on the site. Watkins Johnson made some great shelf mount
>single channel receivers for this purpose, but you could press
>Micor or Exec II receiver strips into service. If you use the split

I agree! The GE Exec II's are the best receivers I have used not only
for links, but also for 5 of my VHF repeaters. No amateur receiver that
I have tried work as well as these Exec II's, and I have tried *alot*.

Nick

****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****

* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

1209. 40m Transmitter or VFO project??- any suggestions?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 05:50:27 UTC
From: n9rzc@uiuc.edu
Message-ID: <n9rzc-200594004612@ruger-13.slip.uiuc.edu>
Source record: 117746

Hello all,

I recently purchased an old boat anchor which is an upgrade from an older boat anchor, but most importantly, it was cheap and it works well. I am planning on upgrading to general this summer and am looking for a nice 40m project (or if you really really prefer another band, I'll take suggestions about bands also). I was thinking along the lines of a QRP cw transmitter that would allow me to make a little set-up for myself. I have a small transmitter (only transistor and such) already in mind that was origionally x-tal stuck, and I figure I could pop in a vfo instead of the x-tal in the project if I wanted, so I'll take suggestions on vfo projects also. I recently did a small 2m kit, and I will be much happier in the lower freq's :) (lead length and such).

In anycase, I'm in your hands, mold me and shape me into something nice!!!

TNX A TON (that's about what this thing weighs ;)
Allen Hall n9rzc@uiuc.edu

1210. Propagation E-Sporadic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 09:27:48 UTC
From: drossier@disuns2.epfl.ch
Message-ID: <2rhvqk$12u@disuns2.epfl.ch>
Source record: 117747

Could anybody tell me if it's possible to tranceive on the 2m band
using the E-sporadic propagation. It seem's to be better with
the SSB mode but I'm not sure that it's not possible to do it with
a FM 2m Handy with 5watts (and perphaps also on 70cm band) ??

Where could I find some info about E-sporadic propag best time and
country ?

Thanks for all..
73 de HB9UFT

D. Rossier

1211. Amidon Cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 12:26:17 UTC
From: boylanj@bcvms.bc.edu
Message-ID: <1994May20.082617.1@bcvms.bc.edu>
Source record: 117749

I am looking for an Amidon torroidal core (#FT240-43, ref. ARRL Handbook 27-2, power supply project). Can anyone help me with an address for Amidon, a distributor for these cores, or a substitute? Thanks in advance.

John Boylan
Boston College NMR Facility
boylan@hermes.bc.edu

1212. Re: Propagation E-Sporadic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 13:31:53 UTC
From: elendir@enst.fr
Message-ID: <2rie49$8rv@cismsun.univ-lyon1.fr>
Source record: 117753

Salut Daniel,

Daniel Rossier (drossier@disuns2.epfl.ch) wrote:
: Could anybody tell me if it's possible to tranceive on the 2m band
: using the E-sporadic propagation. It seem's to be better with
: the SSB mode but I'm not sure that it's not possible to do it with
: a FM 2m Handy with 5watts (and perphaps also on 70cm band) ??

Je vois que tu as comme moi une installation QRP. Je ne suis pas sur a
100 %, mais la propag en E-spo est quand meme tres sportive, surtout sur
2 metres. A mon avis, avec un petit portable ca n est guere possible. La
plupart des contacts en 2 metres BLU se font en tropo ou en meteor scatter.
Les ouvertures en E-spo sont rarissimes. En plus, la BLU etant plus efficace
que la FM va evidemment plus loin. Sur UHF, il n y a plus de E-spo, que de la
tropo - sauf condition vraiment anormale.
Quant a la prevision de la spo, comme son nom l indique, elle est justement
imprevisible. Ce sont des paquets ionises plus fortement qui se forment et se
disloquent on ne sait pas trop comment. Le mieux est de rester a l ecoute !!!
Mais la E-spo, c est grand sur la bande des 6 metres !!!! :-)

73 QRO !
Vincent, F1RCS.

1213. Re: Amidon Cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 14:09:03 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <Cq3tz3.A5z@yuma.ACNS.ColoState.EDU>
Source record: 117750

In article <1994May20.082617.1@bcvms.bc.edu> boylanj@bcvms.bc.edu writes:
>I am looking for an Amidon torroidal core (#FT240-43, ref. ARRL Handbook
>27-2, power supply project). Can anyone help me with an address for Amidon,
>a distributor for these cores, or a substitute? Thanks in advance.

Amidon Associates 310-763-5770
PO Box 956
Torrance, CA 90508

FT-240-43:
OD: 2.4 inches ID: 1.4 inches H: 0.5 inches

Material #43: AL value= 1240, u=850 Nickel-Zinc

Amidon will be more than happy to mail you a catalog that's more like a
torroid info sheet. They also take pla$tic.
Galen, KF0YJ

1214. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 14:31:40 UTC
From: siwasaki@unix1.tcd.ie
Message-ID: <siwasaki.769444300@unix1.tcd.ie>
Source record: 117751
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

In <1994May19.190711.23607@ucl.ac.uk> zcapl34@ucl.ac.uk (Redvers Llewellyn Davies) writes:

>siwasaki@unix1.tcd.ie (Pleasure Death) writes:

>>Hi,

>>i just built a 2-transistor, .2 Watt transistor.
>>I can get pretty good range with it (approx 250 metres) with a 'bad'
>>set-up ,ie not covered, poor antenna.

>>I'm looking to build a bigger, more powerful model, and also make
>>an efficient antenna.

>>Can anyone give me any information on doing this?
>>Also can anyone reccomend any TEXTS are transmittor construction,
>>esp one with circuit diagrams.....

>What frequency?

FM 88 - 108 approx.

Si.

1215. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 14:58:53 UTC
From: mwhite@mitre.org
Message-ID: <mwhite.30.000EFBB2@mitre.org>
Source record: 117755
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

>>Dr. Loomis was a dentist. If I remember correctly, he used a non-powered
>>system where he simply connected his "transmitting" antennae to ground via
>>a telegraph key. I assume that at all time a very small potential
>>difference existed between the antennae and ground, when the key opened and
>>closed, a small current flowed and excited the antennae at its resonant
>>frequency. I'm not sure what he used as a detector, but it did work.

Thanks; a very nice summary. The site where these experiments took place is near my home, in the Virginia mountains west of Washington, DC; there's a historical marker there. His "antennas" were very long vertical wires supported by kites. Loomis thought he was somehow tapping into a flow of aetheric energy moving through the sky. What he was really doing was electromagnetic induction, powered by the atmospheric potential difference between ground level and the top of his skywire some hundreds of feet up. A true pioneer, he was right for all the wrong reasons.

Mike White
mwhite@mitre.org
m14494@mwvm.mitre.org
703-883-7923 office
703-430-8402 home

My opinions are my own, not my employer's.

1216. Re: Amidon Cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 16:25:54 UTC
From: cmoore@ilx018.intel.com
Message-ID: <2rioai$jqd@chnews.intel.com>
Source record: 117752

boylanj@bcvms.bc.edu wrote:
: Can anyone help me with an address for Amidon, John Boylan

Amidon Associates, Inc., P.O.Box 956, Torrance, CA 90508
Tel. (310)763-5770 FAX (310)763-2250

73, KG7BK, CecilMoore@delphi.com

1217. Reply to Allen Hall

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 18:11:00 UTC
From: HICKS.ALAN@epamail.epa.GOV
Message-ID: <01HCKELUQF9K8ZJ0D4@mr.rtpnc.epa.gov>
Source record: 117757

(Allen Hall asked about qrp cw transmitters as a remedy to
boatanchors :)})

I've built the Ramsey 40 meter receiver and transmitter.
Although the transmitter works OK, the receiver is less
satisfactory. Recently I received an NN1G 40-40 QRP kit from the
New England QRP Club which I'm currently building. They have a
new round of these being prepared, so I'll give you the
announcement:

From: mvjf@mvubr.att.com (James M Fitton +1 508 960 2577)
Date: 19 May 94 17:26:00 GMT
Subject: 40/40 kits

Second batch of 40/40 kits :

QRP-New England Club reports that 38 orders for the
second batch of club 40/40 (40m and 30m) transceiver
kits have been received.

All parts for the second batch have been ordered and
kits should still be available in June.

To receive a file on kits and NE club, e-mail your
request to mvjf@mvubr.att.com.

You may also wish to get onto the mailing list for QRP that I got
this information from. Send a message to :

Majordomo@Think.com

To subscribe to the daily message digest on QRP send this
message:

subscribe qrp-digest

or you can

subscribe qrp to receive all the individual messages from
the group.

72 & 73 de KD1DJ, Al (hicks.alan@epamail.epa.gov)

1218. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-20 21:09:35 UTC
From: seymour@netcom.com
Message-ID: <seymourCq4DFz.ILD@netcom.com>
Source record: 117758
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

In article <siwasaki.769353300@unix1.tcd.ie>,
Pleasure Death <siwasaki@unix1.tcd.ie> wrote:
>Hi,
>
>i just built a 2-transistor, .2 Watt transistor.
>I can get pretty good range with it (approx 250 metres) with a 'bad'
>set-up ,ie not covered, poor antenna.
>
>I'm looking to build a bigger, more powerful model, and also make
>an efficient antenna.
>
>Can anyone give me any information on doing this?
>Also can anyone reccomend any TEXTS are transmittor construction,
>esp one with circuit diagrams.....
>
I would recommend the ARRL publication "Circuit Design for the Radio
Amateur". It has more discussion of the circuit theory than the
ARRL Handbook. It also has the circuit diagrams for some projects.
>
>Thanks.
>
>Si.
>

--
Ken Seymour
seymour@ast.saic.com

1219. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-21 03:35:03 UTC
From: ferraro14@aol.com
Message-ID: <2rjvh7$gdq@search01.news.aol.com>
Source record: 117759

In article <seymourCq4DFz.ILD@netcom.com>, seymour@netcom.com
(Kenneth Seymour) writes:
RE:
>i just built a 2-transistor, .2 Watt transistor.
>I'm looking to build a bigger, more powerful model, and also make
>an efficient antenna.

Kenneth...Judging from your message, it appears that you are coming
from the Pirate Radio group......if so you are posting this message
in an Amateur Radio group. We are licensed amateur radio operators
and we do not think kindly of unlicensed operations. There is more to
building a radio transmitter that just putting the parts together and
trying to get something on the air. A poorly built transmitter could
transmit on more than the intended frequency at one time and you
could unknowingly create interference.

If you are interested in becoming a legally licensed ham operator,
let me know and I can point you in the right direction.

1220. Re: What are these chips?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-21 04:29:21 UTC
From: climatol@gnv.ifas.ufl.edu
Message-ID: <1994May20.232921.4449@tower>
Source record: 117760

In article <2r5ugl$po8@apple.com>, kchen@apple.com (Kok Chen) writes:
> denglet1@iia.org (Tom Dengler) writes:
>
>>I have about 40 or so old circuit boards with some socketed chips that I
>>was wondering what they might be good for. Can anyone can give me a
>>brief functional description of these chips?

[...]

>>[6] TMS - 24 pin - See through window on top
>> 2516JL-35
>> MFP8401
>
> Sounds like Texas Instruments' version of the 2716 EPROM, 350 ns
> access time. 8401 again a date code - 1st week, 1984. Do you see a
> TI logo (little map of the Republic of Texas) on it? 16 kilo bits
> (no, not bytes -- we are talking about the stone age, remember?)
> worth of erasable memory. I don't completely remember now, but there
> was something quirky about the 25xx series. Was it that it needed
> a +12 volt supply in addition to +5 volt?

What was quirky was the TMS2716 : it used different programming voltages
than everyone else's 2716. The TMS2516 was TI's version that used the
same voltages as everyone else (so I guess its quirk was that it was
numbered differently).

-- Bob
rejo@gnv.ifas.ufl.edu

1221. Re: Digital Delay Circuit Ideas?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-21 04:37:52 UTC
From: climatol@gnv.ifas.ufl.edu
Message-ID: <1994May20.233752.4450@tower>
Source record: 117761
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <jra.126.00088822@lawdept.daytonOH.ncr.com>, jra@lawdept.daytonOH.ncr.com (John Ackermann) writes:
> I'm designing a clock to be driven by my local frequency standard. My goal is
> to be able to set the second mark to better than 1 millisecond (and I hope
> eventually much better than that).
>
> To do this, I need to build a variable delay that I can use to slew the
> seconds marker. Actually, I'll need a couple of delays, starting at a higher
> frequency for fine adjustment, and finally running at a lower one for course
> adjust. Obviously, for stability reasons I want to do this digitally and not
> with some sort of analog delay.
>
> Any suggestions on CMOS devices (probably a presettable counter?) that
> would work well here? The larger the count range in a single chip, the
> better.
>
> Thanks...
>

You don't give enough detail about your circuit to make a definite choice, but I would be extremely inclined to use a low-end microcontroller here. Depending on the device you select, you should easily be able to set up a selectable delay accurate to anywhere from one microsecond to .1 millisecond.

For that matter, why not do the whole thing in a microcontroller?

-- Bob Johnson, WB4JCM
rejo@gnv.ifas.ufl.edu

1222. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-21 21:57:03 UTC
From: shroom@theporch.raider.net
Message-ID: <Cq6AB4.C33@theporch.raider.net>
Source record: 117764
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

seymour@netcom.com (Kenneth Seymour) writes:

>>I'm looking to build a bigger, more powerful model, and also make
>>an efficient antenna.

>I would recommend the ARRL publication "Circuit Design for the Radio
>Amateur". It has more discussion of the circuit theory than the
>ARRL Handbook. It also has the circuit diagrams for some projects.

Rule of thumb for a dipole antenna: element length (in feet) = 234 divided
by the frequency in MHz.

shroom@theporch.raider.net

1223. Re: Amidon Cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-21 23:29:49 UTC
From: kchen@apple.com
Message-ID: <2rm5hd$92t@apple.com>
Source record: 117762

boylanj@bcvms.bc.edu writes:

>I am looking for an Amidon torroidal core (#FT240-43, ref. ARRL Handbook
>27-2, power supply project). Can anyone help me with an address for Amidon,
>a distributor for these cores, or a substitute? Thanks in advance.

Amidon advertises in QST and Communications Quarterly.

They can be reached at

Amidon Associates, Inc.
P. O. Box 956
Torrance, CA 90508

Phone: 310-763-5770
Fax: 310-763-2250

I have ordered numerous times from them and found them to be very
friendly and efficient. Other than being a satisfied customer, and
being glad for a convenient place that sells ferrite materials to
individuals, I have no connections with them.

73

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

1224. FCC licensing delays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 00:01:00 UTC
From: darryl.linkow@ledge.com
Message-ID: <cf.889.437.0N2EEB84@ledge.com>
Source record: 117765

Hello all! I have now been waiting for 7 weeks for my first
license to arrive in the mail. Having read all the horror stories
on the nets regarding waiting times, I decided to call the FCC in
Gettysburg and find out what the REAL problem is myself. I spoke
to a very nice woman who told me that it is now taking from 12 to
14 weeks to process application forms because there is only ONE PERSON
keying in the information to the computer. Also, she said that
the "new computer" that people have talked about on the nets is not
online yet. (Hmm...it only took me a couple of hours to set up my
latest 486 box!). At any rate, this ONE PERSON evidently has
thousands of licenses to process. The woman told me that she had
not heard of any offers from the ARRL regarding local volunteers in
the Gettysburg area coming in to help out with the backlog and
enter data into the computer. I told her that since we have
volunteers doing license testing, at no charge to the Federal
government via the VEC program, it seems that we could have
volunteer personnel to perform data entry! She also told me that
the Gettysburg office has requested additional help several times from the
Managing Director of the FCC in Washington, D.C., but the man
refuses to give them any more employees, for even a short period of
time, to clear up the backlog of license applications. I have
called my local Congressman, Representative Anthony Beilenson, and
told one of his staff about the problem. I asked if the
Congressman could contact the Managing Director and ask for some
additional staffing in Gettysburg, at least on a temporary basis,
to get the backlog of amateur radio applications (Form 610)
processed. Perhaps if everyone told their respective Congressman
about the problem, we could get some help! Here is the name,
address, and phone number of the FCC Managing Director who will not
let Gettysburg have any additional people to help get rid of the
backlog: Andrew Fishel
Managing Director
FCC
1919 M Street, N.W.
Washington, DC
(202) 632-6390
Just as an aside, I decided to get my amateur license because of
the problems associated with the January 17 earthquake here. The
American Red Cross had a severe shortage of qualified amateur radio
operators to handle emergency traffic after the earthquake. So, I
decided, as a citizen of the community, that I would get my
license, so that I might get involved in disaster communications,
and be ready to assist, if needed. But, as of right now, I can not
participate in any emergency networks until my license arrives!!

Also, I am routing a copy of the above information to President Clinton and Vice President Gore. I understand that Vice President Gore is very interested in information processing and bottlenecks in those areas of the government that are having problems processing data.

I am open to discussing this with anyone on the net, but if you want to work for the improvement of this problem, please call or write to Mr. Fishel and your elected federal government officials in Congress and The White House.
Sincerely,
Darryl Linkow (no callsign after 7 weeks and don't expect to see one for another 5 to 7 weeks!)

 OLX 2.2 Darryl Linkow (818)346-5278 9 am - 5 pm PDT

1225. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 01:16:33 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2rmbph$bh6@hobbes.cc.uga.edu>
Source record: 117763

In article <2rjvh7$gdq@search01.news.aol.com> ferraro14@aol.com (Ferraro14) writes:
>In article <seymourCq4DFz.ILD@netcom.com>, seymour@netcom.com
>(Kenneth Seymour) writes:
>RE:
>>i just built a 2-transistor, .2 Watt transistor.
>>I'm looking to build a bigger, more powerful model, and also make
>>an efficient antenna.
>
>Kenneth...Judging from your message, it appears that you are coming
>from the Pirate Radio group......if so you are posting this message
>in an Amateur Radio group. We are licensed amateur radio operators
>and we do not think kindly of unlicensed operations. [...]

More to the point, and not wanting to seem sanctimonious, we don't
want to risk *our* licenses by incurring any legal liability for what
you are doing. So all you'll get here is references to a few standard
handbooks. We're not snobbish; but, as license holders, we have more
than the usual reason to steer clear of anything illegal.

73 de N4TMI

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1226. Re: FCC licensing delays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 11:47:04 UTC
From: sct@po.cwru.edu
Message-ID: <2rngno$qv5@usenet.INS.CWRU.Edu>
Source record: 117766
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

At least it isn't like The Bad Old Days, when the _exams_ were only once every three months. :-)

The FCC took 12 weeks to get me my last license. They have in recent memory been as fast as 7 weeks, but that didn't last long. It takes time, and one should simply accept that and be patient. Use the time to buy a copy of the ARRL Handbook or Operating Guide and read it, or buy a receiver and start working on your Morse Code. Just think of the boasting power you will have if you can upgrade to General or Advanced before your first license arrives!

In other words, yes, it's a bother to wait, but don't sweat it. The wait is not known to be fatal. If you want to get involved in ham radio Right Now (and what new ham doesn't want that?), buy books and read them and buy a receiver and listen. You'll learn a lot and be much more ready to start participating when that license arrives.

Because this has zilch to do with homebrewing, please send any followups to rec.radio.amateur.misc. Thanks.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1227. HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 19:57:00 UTC
From: Dave.Smith@eccles.seuk.com
Message-ID: <3f7_9405230712@seuk.com>
Source record: 117671

* In a message originally to All, siwasaki@unix1.tcd.ie said:

ss > From: siwasaki@unix1.tcd.ie (Pleasure Death)
ss > Organization: University of Dublin, Trinity College

ss > Hi,

ss > i just built a 2-transistor, .2 Watt transistor.
ss > I can get pretty good range with it (approx 250 metres)
ss > with a 'bad'
ss > set-up ,ie not covered, poor antenna.

ss > I'm looking to build a bigger, more powerful model, and
ss > also make
ss > an efficient antenna.

ss > Can anyone give me any information on doing this?
ss > Also can anyone reccomend any TEXTS are transmittor
ss > construction,
ss > esp one with circuit diagrams.....

ss > Thanks.

Hi ya Si,

my local electronic junk shop sell contruction kits conplete with PCB and components.They do a 25 Watt 2 Transistor module and a lower 15 Watt version.
I dont know what frequency tese are on. I know they are FM but unsure if they are Narrow or Wide band... Net mail me or E mail me and I will try and find out more info for you. Thats if this is what you are looking for...

Keep your head down.
All the best

Dave Smith G7PKS Brighton England. FIDO NET 2:441/86
--
Standard disclaimer: My views are strictly my own.

1228. dir /new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 21:55:01 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994May22.155501.1@ccsvax.sfasu.edu>
Source record: 117767

I'm re-entering home-brewing after a long absence. My skills include all the oldfashioned stuff you don't much need anymore. Like laying out aluminum panels, wiring kilovolt circuits so they don't kill you, even winding tank coils on octal-plug forms. Even so, I can actually etch a circuit board and get the circuit to work. But one item has me stumped: How does the average kitchen-sink tinkerer get the two sides of these complex, double-sided digital boards to register. Close is clearly not enough with these boards...looks like you need to be in register to +- .01 inches. One thing has occurred to me. I could try using the Xerox-transfer, iron-on patterns, etch one side, then drill it and register with holes cut into the pattern for the other side. Guess that would work, but it seems like a LOT of work.

So what simple operation am I missing? And if this is already in a FAQ somewhere, please accept my appology in advance, and point me to it.

Thanks!
Jim

James R. Speer Phone: 409 568 1478
Department of Psychology Fax: 409 568 2190
Stephen F. Austin State University E-mail: F_SPEERJR@ccsvax.sfasu.edu
Nacogdoches TX 75962-3046 Ham Radio: K5YUT

1229. Re: Repeater linking, wha

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 22:10:00 UTC
From: andy.moss@canrem.com
Message-ID: <60.2191.3290.0N19F4AD@canrem.com>
Source record: 117668

G = >We are are thinking of upgrading our 2m repeater to include some
G = >remote recievers, linked back on 70cm and selected through a
G = >Doug Hall Electronics voter.

Why not just put the 2m remote at the same site?

G = >What is the general wisom as to sources of link recievers/transmitters
G = >what to use for remote (cross band) repeaters, expected ranges,
G = >power level, etc?

G = >I think that a Kenwood 732 would make a cheap remote site, if it
G = >was set to low power it could probably handle the duty cycle.
G = >A small brick could boost the power.
G =
G = Horrible choice. The intermod at a good high site will drive this
G = radio crazy. It's transmitter is also dirty enough to generate
G = complaints from other site users. About the only amateur grade
G = equipment that's usable at a high site is the Icom 900/901 band
G = modules, and they aren't really great.

I concur. I have three friends that had the '732. The radio is a piece
of rubbish. The receiver is one of the weakest I've ever had the dis-
pleasure of using. It sucks in noise and gets saturated so badly in this
city that it often becomes unusable. One of my friends had the RX front-end
repaired twice before the front panel melted completely and has become
unrepairable. Many of the features are poorly engineered or simply don't
work.

G = Synthesized would be bad. You want crystal controlled receivers with
G = at minimum TCXOs, and preferably ovens. Stability is critical, and
G = the cleaner LO spectrum of the crystal rigs will also help reject
G = other crud on the site.

I wonder if the original poster meant a frequency-agile-remote-transceiver?
aka "FART" <G>

---
* Magical Mail * Free advice is usually worth what you pay for it.

1230. R-23A/ARC5 Receiver Conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 23:02:12 UTC
From: poochie1@bga.com
Message-ID: <2roo9l$1jl@giga.bga.com>
Source record: 117669

I was wondering if anyone knew where I could get conversion docs, info, or schematics for R-23A/ARC-5 surplus receivers. I have several of these and want to put them to work, eg. Q5ers. Thanks to all in advance.

73 de KC5CWG

LLarry Braden - Austin, Texas INTERNET poochie1@bga.com
"Onward through the fog!" :-}) AMPRNET: kc5cwg@dfwgate.kf5mg.ampr.org
---

1231. Re: HELP! Need 'advice' on transmitter construction.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-22 23:07:22 UTC
From: seymour@netcom.com
Message-ID: <seymourCq888A.5Ix@netcom.com>
Source record: 117670

In article <2rjvh7$gdq@search01.news.aol.com>,
Ferraro14 <ferraro14@aol.com> wrote:
>In article <seymourCq4DFz.ILD@netcom.com>, seymour@netcom.com
>(Kenneth Seymour) writes:
>RE:
>>i just built a 2-transistor, .2 Watt transistor.
>>I'm looking to build a bigger, more powerful model, and also make
>>an efficient antenna.
>
>Kenneth...Judging from your message, it appears that you are coming
>from the Pirate Radio group......if so you are posting this message
>in an Amateur Radio group. We are licensed amateur radio operators
>and we do not think kindly of unlicensed operations. There is more to
>building a radio transmitter that just putting the parts together and
>trying to get something on the air. A poorly built transmitter could
>transmit on more than the intended frequency at one time and you
>could unknowingly create interference.
>
>If you are interested in becoming a legally licensed ham operator,
>let me know and I can point you in the right direction.

I (Kenneth Seymour) am not the person requesting transmitter information.
I was responding to a post from siwasaki@unix1.tcd.ie. Had I looked
more closely at the original post, I would have realized that this
was not a radio amateur with a ligitamate request on how to make legal
transmitters. When I posted I did not notice the cross post to a
pirate radio group. Nor did I notice that this person goes by the
name "Pleasure Death".

I appreciate the offer of assistance, but I already hold licence KN6QC.
Thanks anyway.

Just to clarify I AM NOT THE PERSON WHO ASKED ABOUT FM TRANSMITTERS.

--
Ken Seymour
seymour@ast.saic.com

1232. Re: dir /new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 08:11:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994May23.081113.5981@ke4zv.atl.ga.us>
Source record: 117672

In article <1994May22.155501.1@ccsvax.sfasu.edu> f_speerjr@ccsvax.sfasu.edu (James Speer) writes:
>I'm re-entering home-brewing after a long absence. My skills include all the
>oldfashioned stuff you don't much need anymore. Like laying out aluminum
>panels, wiring kilovolt circuits so they don't kill you, even winding tank
>coils on octal-plug forms. Even so, I can actually etch a circuit board and get
>the circuit to work. But one item has me stumped: How does the average
>kitchen-sink tinkerer get the two sides of these complex, double-sided digital
>boards to register. Close is clearly not enough with these boards...looks like
>you need to be in register to +- .01 inches. One thing has occurred to me. I
>could try using the Xerox-transfer, iron-on patterns, etch one side, then drill
>it and register with holes cut into the pattern for the other side. Guess that
>would work, but it seems like a LOT of work.
>
>So what simple operation am I missing? And if this is already in a FAQ
>somewhere, please accept my appology in advance, and point me to it.

What you do is have registration bullseyes on at least the four corners
of both patterns, drill holes through the board based on one pattern's
bullseyes (often the holes that will end up as the board mounting holes),
and register the other pattern on those holes. Now expose both sides, and
etch. Yes it is a pain to do double sided boards. For real pain, try doing
multi-layer boards.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1233. Re: dir /new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 13:09:07 UTC
From: zlau@arrl.org
Message-ID: <1994May23.130907.3190@arrl.org>
Source record: 117675

James Speer, K5YUT, Austin State University(f_speerjr@ccsvax.sfasu.edu) wrote:
: I'm re-entering home-brewing after a long absence. My skills include all the
: oldfashioned stuff you don't much need anymore. Like laying out aluminum
: panels, wiring kilovolt circuits so they don't kill you, even winding tank
: coils on octal-plug forms. Even so, I can actually etch a circuit board and get
: the circuit to work. But one item has me stumped: How does the average
: kitchen-sink tinkerer get the two sides of these complex, double-sided digital
: boards to register. Close is clearly not enough with these boards...looks like
: you need to be in register to +- .01 inches. One thing has occurred to me. I
: could try using the Xerox-transfer, iron-on patterns, etch one side, then drill
: it and register with holes cut into the pattern for the other side. Guess that
: would work, but it seems like a LOT of work.

Maybe you don't. There are some things that are beyond kitchen-sink
tinkerers--building GaAs MMICs, for instance. It is entirely possible
that the traces on a board will be too thin and require too much precision
to easily fabricate at home. Interestingly enough, the digital people have
pushed board houses to the point where getting "precision" etching for
microwave microstrip work isn't really a problem anymore.

However, you might consider wire-wrapping such a board. Many people have
had good results with this, even with clock speeds in excess of 20 MHz.
Or, go ahead and buy the board...

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1234. Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 14:32:29 UTC
From: drs@ccd.harris.com
Message-ID: <1994May23.143229.2676@ccd.harris.com>
Source record: 117684

I hesitate to post to this group anymore - I seem to get responses indicating that I should know all the answers since I have an extra class license. Anyway:

Anybody ever made any sort of measuring device for measuring the back pressure in a cooling system for a transmitting tube? I have seen references to things like so many cubic feet of air flow. Or .6 inches of backpressure. Or does everyone just make sure they are running a blower that is over-rated just to be safe? I'd prefer to do it right, since the bigger the blower, the more noise present in the shack. Unless I put the blower in a different room! If this is the sort of thing that interests others, you might post your comments here rather than direct to me. Thanks....

73's Doug

--

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |

1235. Need help on inductor winding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 15:26:21 UTC
From: white@ccsua.ctstateu.edu
Message-ID: <1994May23.102621.1@ccsua.ctstateu.edu>
Source record: 117673

I'm building the RadioKit QRP-20 kit. The manual calls for inductors
with "2-T links"..... what does that mean? Does it mean a 2-turn
secondary? Thanks, and if anyone has info on winding inductors (esp.
the oddball subminiature inductor for the 7MHz Optimized Transceiver),
I would appreciate a lead on where to find it.
73 de N1QVE
Harry

1236. Q: Plans for TNC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 17:07:59 UTC
From: whitemp@hemp
Message-ID: <1994May23.110800.15024@cnsvax.uwec.edu>
Source record: 117674

Hello-
Are there any published plans for a 1200 baud TNC? Not a baycom type,
but a 'full blown' TNC. If so, where?

--

Mike White whitemp@cnsvax.uwec.edu
N9UXC Tech+ and climbing

1237. Proper way to bias a tunnel diode?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 19:57:21 UTC
From: jacob@altair.csustan.edu
Message-ID: <Cq9u3M.9sp@koko.csustan.edu>
Source record: 117677

know tunnel diodes are an extinct species, hence the trouble
I am having locating circuits for them, but does anyone out there
know how to bias these little demons so that they remain stable?
I need to bias them at 0.15 volt, so that after applying a
0.05 volt modulating voltage they remain near their peak tunnel
current, without strange things happening.

Any help appreciated.
Dave.

1238. Re: Man named Loomis invented radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 20:24:23 UTC
From: cleveland@gvg47.gvg.tek.com
Message-ID: <cleveland.1120112303A@gold>
Source record: 117679
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In Article <2r8f28$ha2@vixen.cso.uiuc.edu>, btbg1194@uxa.cso.uiuc.edu
(Bradley T Banko) wrote:
>Newsgroups: uiuc.org.synton
>Subject: Somebody named Loomis invented radio?
>Date: 1 May 1994 02:01:51 GMT
>Organization: University of Illinois at Urbana
>
>I read something recently that a man named Loomis might have
>"invented" radio in the late 1800's before Marconi & Hertz et al.
>

Mahon Loomis - yup!

Didn't exactly invent radio, but he did experiment with atmospheric
communications. Seems he flew two kites with wire for leads. In one lead
was a telegraph key and in the other a primitive galvanometer.
Keying one circuit gave a reading in the other, which was located several
miles away.

That's serious qrp work.

****
* Grover Cleveland WT6P@KE6LW.#NOCAL.CA *
* Instructional Designer v(916) 478-3153 *
* The Grass Valley Group Inc. - A Tektronix Company f(916) 478-3831 *
* Grass Valley, California DoD 7388 *
* "Snoozing in the grass next to the information goat path." *
****

1239. Re: Propagation E-Sporadic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 21:59:15 UTC
From: sbut-is@seatimes.com
Message-ID: <2rr8vj$t1i@seatimes.seatimes.com>
Source record: 117676

Daniel Rossier (drossier@disuns2.epfl.ch) wrote:
: Could anybody tell me if it's possible to tranceive on the 2m band
: using the E-sporadic propagation. It seem's to be better with
: the SSB mode but I'm not sure that it's not possible to do it with
: a FM 2m Handy with 5watts (and perphaps also on 70cm band) ??

During the Fall we typically get interference from another repeater about
150 miles south of us. In fact, the local control op has been known to
drop the PL tone so the local machine won't respond and carry on a
conversation (short) with the control op of the other machine (friendly
conversation!).

+--+
| Steve Butler Voice: 206-464-2998 |
| The Seattle Times Fax: 206-464-2905 |
| PO Box 70 Internet: sbut-is@seatimes.com |
| Seattle, WA 98111 Packet: KG7JE @N7FSP.WA.NA |
+--+

1240. Re: Proper way to bias a tunnel diode?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 23:14:23 UTC
From: mack@ncifcrf.gov
Message-ID: <CqA37z.3y4@ncifcrf.gov>
Source record: 117678

In article <Cq9u3M.9sp@koko.csustan.edu> jacob@altair.csustan.edu (Dave Jacob) writes:
> know tunnel diodes are an extinct species, hence the trouble
>I am having locating circuits for them, but does anyone out there
>know how to bias these little demons so that they remain stable?
>I need to bias them at 0.15 volt, so that after applying a
>0.05 volt modulating voltage they remain near their peak tunnel
>current, without strange things happening.

This is not my line, and so comes under the category of ANY advice...
2
You need to current bias as there are 3 places on the v-i
curve for the tunnel voltage. So find the tunnel current first (from
specs), and you don't get any choice about the voltage.

Joe Mack NA3T
mack@ncifcrf.gov

>
>Any help appreciated.
>Dave.
>
>

1241. Modification of walkie talkies..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-23 23:35:59 UTC
From: sebelt01@starbase.spd.louisville.edu
Message-ID: <2rrekv$90c@hermes.louisville.edu>
Source record: 117681

I want to modify a pair of (cheap) walkie talkies to have greater range. I have three things in mind:

1 - Improve the antenna: 49.860 / 468 = 9.4 ft. Will a 9.4 ft length of wire do the trick? What gauge is _best_?

2 - Get rid of some resistors. It seems that there is a resistor right between a very small coil and the antenna. I'm not sure of it's purpose (does it just reduce the output power, or limit interference, or protect something in the transceiver? The resistor is labeled L2, with the coil before it labeled L1. (Which makes me thing it has somethign to do with tuning or interference).. If I remove this will my signal become stronger? (where I'm using these interference will be virtually no problem).

3 - Add an amplifier. How hard is it to amplify the signal? Is it just a matter of adding on a resistor, or is such a circuit more comples. Again, I'm not too worried about causing interference where these transceivers will be used, but I need to make them as powerful as possible.

Thanks for any help/suggestions/whatever. Please respond by mail if at all possible, I will post a summary in the form of a how-to, if I can get this to work.

1242. Re: Drake MN2000 to 160 meters-- Anyone done it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 00:15:08 UTC
From: alanb@sr.hp.com
Message-ID: <CqA618.Et4@srgenprp.sr.hp.com>
Source record: 117680

YVES ALBERT (yves1@delphi.com) wrote:
: Anyone have a ny experience adding 160 capability to a Drake MN2000 antenna
: tuner? (aside from external components) any help would be appreciated.

Sounds like it would be more trouble than it's worth. You would have to unsolder the bandswitch and replace it with one with an extra switch position. Then you'd have to add a 160 meter tank coil. The only thing that would likely fit would be a high-power powdered-iron toroid. The tuning capacitors would likely not have enough range -- you would have to add switchable fixed capacitance in parallel with both of them.

It would probably be easier to build a separate 160 meter tuner and use the MN2000 to switch it in as appropriate!

AL N1AL

1243. Re: Modification of walkie talkies..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 04:40:13 UTC
From: sct@po.cwru.edu
Message-ID: <2rs0fd$fev@usenet.INS.CWRU.Edu>
Source record: 117682

In article <2rrekv$90c@hermes.louisville.edu>,
<sebelt01@starbase.spd.louisville.edu> wrote:
> I want to modify a pair of (cheap) walkie talkies to have greater range. I
> have three things in mind:

That's a bad idea. Read on to see why.

> 1 - Improve the antenna: 49.860 / 468 = 9.4 ft. Will a 9.4 ft length of wire
> do the trick? What gauge is _best_?

It could conceivably help, but you need to use the right formula for the
antenna design and connect it correctly to the radio. The radio may be
designed for the antenna it is using and may function incorrectly with
other antennas.

> 2 - Get rid of some resistors.

Not all that looks like a resistor is one. With a name like L2, that
"resistor" is an inductor. It is there to reduce interference, to match
the transmitting circuitry to the antenna, or both. Don't remove it.

> If I remove this will my signal become stronger? (where I'm using these
> interference will be virtually no problem).

Removing L2 will not improve your signal in any perceptible way. If it
is there for antenna matching, removing it will make your signal worse!

The interference you can cause will be a problem. Plopping a spurious
signal into the FM broadcast band, the business band, or a TV channel is
uncouth. Putting it into the aircraft band could cause safety problems.
Worse, you can't know whether you are causing interference without test
equipment like a spectrum analyzer.

> 3 - Add an amplifier. How hard is it to amplify the signal? Is it just a
> matter of adding on a resistor, or is such a circuit more comples.

An amplifier requires more than a resistor.

If you want better range, I suggest a CB in handheld or mobile form.
That will give you 4 watts output in near-line-of-sight communications.
For better than that, get a ham radio license. The no-code license is
not too hard to get and opens a wide range of communications.

What are you trying to do with the radios, anyway?

Stephen

--
Stephen Trier

sct@po.cwru.edu
KG8IF

1244. TV Xtal? filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 08:51:25 UTC
From: agterkam@fwi.uva.nl
Message-ID: <2rsf6d$o0v@mail.fwi.uva.nl>
Source record: 117683

Can someone tell me more about 38.9 MHz TV-IF XTAL filters.

I presume these are XTAL filters ?

OFW 361 (Siemens)
SW 170 (PLessey)

What are there specs ? Fo, BW, etc.

Chears, Dirk.

1245. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 14:06:52 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2rt1ls$jqu@hobbes.cc.uga.edu>
Source record: 117686

In article <jra.134.0009217C@lawdept.daytonOH.ncr.com> jra@lawdept.daytonOH.ncr.com (John Ackermann) writes:
>Does anyone know of an inexpensive A/D that outputs a serial data stream? If
>that's not available, what would be the simplest microcontroller board that
>could do this?
>
>I have a piece of test equipment with a chart recorder output (0 to 1 ma).
>I'd like to sample once per second and store the data in an ascii file on a
>computer. I have plenty of spare serial ports, but no slots available to add
>a pc bus D/A board.

See recent issues of both Computer Craft and Dr Dobb's Journal for articles
on how to use serial-output ADCs. The outputs are not RS-232, and it's
easier to attach them to a parallel port than a serial port (even though
the bits are sent serially).

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1246. Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 14:07:47 UTC
From: jra@lawdept.daytonOH.ncr.com
Message-ID: <jra.134.0009217C@lawdept.daytonOH.ncr.com>
Source record: 117685

Does anyone know of an inexpensive A/D that outputs a serial data stream? If that's not available, what would be the simplest microcontroller board that could do this?

I have a piece of test equipment with a chart recorder output (0 to 1 ma). I'd like to sample once per second and store the data in an ascii file on a computer. I have plenty of spare serial ports, but no slots available to add a pc bus D/A board.

Thanks...

John Ackermann AG9V
jra@lawdept.daytonOH.ncr.com

1247. Re: Proper way to bias a tunnel diode?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 14:48:45 UTC
From: tomb@lsid.hp.com
Message-ID: <CqBAH9.6Dy@hpcvsnz.cv.hp.com>
Source record: 117691

Joe Mack (mack@ncifcrf.gov) wrote:
: In article <Cq9u3M.9sp@koko.csustan.edu> jacob@altair.csustan.edu (Dave Jacob) writes:
: > know tunnel diodes are an extinct species, hence the trouble
: >I am having locating circuits for them, but does anyone out there
: >know how to bias these little demons so that they remain stable?

: This is not my line, and so comes under the category of ANY advice...
: 2
: You need to current bias as there are 3 places on the v-i
: curve for the tunnel voltage. So find the tunnel current first (from
: specs), and you don't get any choice about the voltage.

Eh? For a given _current_ there can be up to three possible _voltages_.
But for a given _voltage_ there is only one _current_. So if you want
it stable, bias it with a _voltage_. Use a very low impedance source.
It must be low impedance at all frequencies that the diode is likely to
oscillate at, or you may have trouble in the negative resistance region.

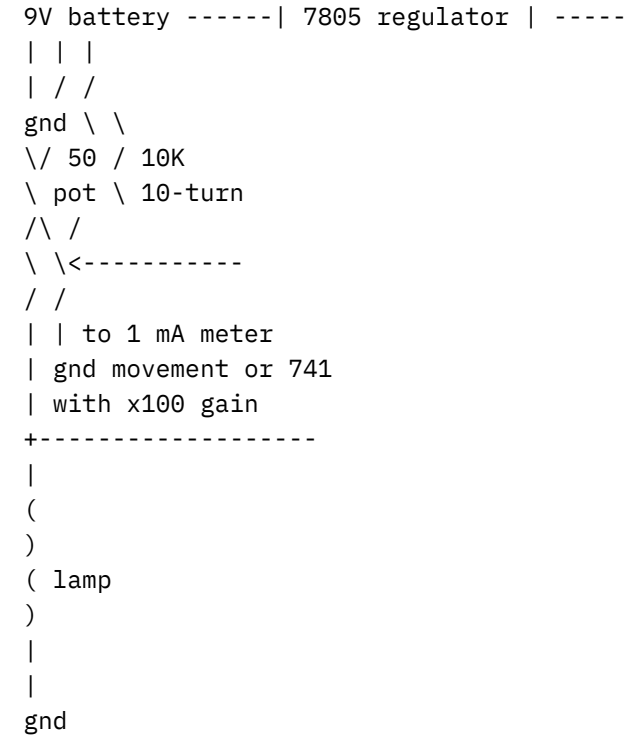
73, K7ITM

1248. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 15:35:38 UTC
From: kludge@netcom.com
Message-ID: <kludgeCqBCnF.JwM@netcom.com>
Source record: 117687

In article <1994May23.143229.2676@ccd.harris.com> drs@ccd.harris.com (Elie Nasr) writes:
>
>Anybody ever made any sort of measuring device for measuring the back pressure
>in a cooling system for a transmitting tube? I have seen references to things
>like so many cubic feet of air flow. Or .6 inches of backpressure. Or does
>everyone just make sure they are running a blower that is over-rated just to
>be safe? I'd prefer to do it right, since the bigger the blower, the more

What you need is a hot-wire anemometer!



The lamp is a 12V automotive bulb, with the envelope broken and
the filament exposed to air. Before breaking the bulb, set the
50 ohm pot so that the lamp just barely glows, then back off
slightly until it no longer glows at all. Then set the 10K pot for
zero output level. Now break the envelope.

You will see a significant DC offset on the output with the envelope
broken, because the filament is exposed to air which cools it considerably,
reducing its resistance. The greater the airflow, the less resistance, and
the greater the meter reading. You will need a couple of fans with known
air speed rates to calibrate it.

This will only measure velocity, not volume, so you need to multiply by
the area of the cross-section of the chamber which you've got the thing in

in order to get a flow rate.

For better accuracy, you can replace the 10K resistor with two fixed resistors and a pot so that the varies along a much smaller range. I give the above as an example that works and is an easy proof of concept model.

This is not as sensitive to ambient temperature as you might expect, either. If you are worried about that, you can run the filament hotter, but you will have a much shorter lifetime of the lamp.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1249. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 18:48:52 UTC
From: alanb@sr.hp.com
Message-ID: <CqBLLH.FtH@srgenprp.sr.hp.com>
Source record: 117688

Elie Nasr (drs@ccd.harris.com) wrote:

: Anybody ever made any sort of measuring device for measuring the back pressure
: in a cooling system for a transmitting tube? I have seen references to things
: like so many cubic feet of air flow. Or .6 inches of backpressure. ...

The standard way to do it is with a plastic tube filled with water. Seal one end of the tube inside the chassis and fasten the other end somewhere in the outside air. Turn on the blower and note how much the water level changes.

However, the real thing you are concerned about is not the air pressure, but the temperature of the tube. The base seals are generally the critical components. A good inexpensive way to measure the temp is to use temperature-sensitive paint (Tempilac brand, for example). The paint changes color when it reaches its critical temperature. Buy using several different paints of different critical temperatures, you can determine the maximum seal temperature.

AL N1AL

1250. Re: FCC licensing delays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 18:53:05 UTC
From: dts@world.std.com
Message-ID: <CqBLsH.DEL@world.std.com>
Source record: 117689

Change of address forms for my wife and myself took just over 10 weeks.
I used the new 610 forms, and mailed them directly to Gettysburg. It
would be nice if they got a little more help down there, especially since
most of the new development areas the administration wants to go after
(information superhighway, PCS, etc.) are things the FCC is responsible
for.

Of course we might ultimately get more milage if we paid user fees like
the rest of the spectrum users...

Dan N1JEB
--

Daniel Senie Internet: dts@world.std.com
Daniel Senie Consulting n1jeb@world.std.com
508-779-0439 Compuserve: 74176,1347

1251. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 18:58:31 UTC
From: dts@world.std.com
Message-ID: <CqBM1J.F92@world.std.com>
Source record: 117690

In article <jra.134.0009217C@lawdept.daytonOH.ncr.com> jra@lawdept.daytonOH.ncr.com (John Ackermann) writes:
>Does anyone know of an inexpensive A/D that outputs a serial data stream? If
>that's not available, what would be the simplest microcontroller board that
>could do this?
>
>I have a piece of test equipment with a chart recorder output (0 to 1 ma).
>I'd like to sample once per second and store the data in an ascii file on a
>computer. I have plenty of spare serial ports, but no slots available to add
>a pc bus D/A board.
>

Check out the Postage Stamp board. It's a little RISC engine programmed with
a BASIC interpreter. There's some good stuff in this month's Nuts & Volts,
and the Parallax stuff us available from DigiKey.

The processor boards are 1 inch by 2 inches. There are 8 I/O pins that can
be used for several purposes, including serial I/O. Processor boards are
$39 from digikey (power is a 9V battery, or build a power source), and
a development kit is somewhere around $130, including on processor board.

I'm planning on taking a closer look at these, as they would appear to be
a VERY cheap way to implement a lot of stuff...

Dan N1JEB
--

Daniel Senie Internet: dts@world.std.com
Daniel Senie Consulting n1jeb@world.std.com
508-779-0439 Compuserve: 74176,1347

1252. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 19:09:44 UTC
From: frohro@wwc.edu
Message-ID: <2rtjdo$smj@shasta.wwc.edu>
Source record: 117694

You might check out Micro Linear's ML2223 A/D. It has just what you want, a built in UART. Your computer must be able to receive 8 data bits plus one stop bit. It is a 12 bit A/D and quite nice. There are also other ones made by Crystal Semiconductor and Analog Devices if I remember right that have lots of other options at a much greater cost (> $40 / chip).

--
Rob Frohne
E. F. Cross School of Engineering, Walla Walla College
Phone: (509) 527-2075 FAX: (509) 527-2867
Internet e-mail: frohro@wwc.edu

1253. Ramsey 2m Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 20:50:57 UTC
From: blaknite@pipeline.com
Message-ID: <2rtpbh$jmt@pipeline.com>
Source record: 117713

Hi everyone. I just came accross an old Ramsey 2m amp kit that I attempted to build a few years ago in summer camp. Unfortunately, I wasn't very good at building stuff back then, and I did a pretty bad job of putting it together. The folks at Ramsey won't help, so I was wondering if anyone would be willing to take a look at it and give a shot at getting it to work. I would be willing to pay a bit to have this done, if ya really want $$$. It seems kind of a shame to let a $50 40-watt amp go to waste, eh? Thanks for any help in advance...

Noah AA2KT
blaknite@pipeline.com

1254. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-24 22:36:13 UTC
From: jpll@vectorbd.com
Message-ID: <CqBw4D.LrA@vectorbd.com>
Source record: 117701

Elie Nasr (drs@ccd.harris.com) wrote:

: Anybody ever made any sort of measuring device for measuring the back pressure
: in a cooling system for a transmitting tube? I have seen references to things
: like so many cubic feet of air flow. Or .6 inches of backpressure. Or does

You can make a simple "U-tube" manometer with plastic tubing and water
and measure "inches of water" pressure/vacuum that way.

-Jim (Harris Corp/RF Comm Group)

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

1255. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 00:12:13 UTC
From: sct@po.cwru.edu
Message-ID: <2ru54t$ir3@usenet.INS.CWRU.Edu>
Source record: 117717

You could do the A/D conversion in software on the PC. Dual-slope integration is accurate and requires as little as one digital output and one digital input. DTR, DSR, RTS, and CTS on the serial port could serve for the I/O.

At 1 Hz samples, it's not going to put much of a demand on the CPU. Accurate timing is a must, though, so you need either a high-resolution timer or the ability to turn off interrupts for long enough to do software timing.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1256. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 05:14:02 UTC
From: nx7u@aol.com
Message-ID: <2rumqq$evq@search01.news.aol.com>
Source record: 117692

In article <kludgeCqBCnF.JwM@netcom.com>, kludge@netcom.com (Scott Dorsey) writes:

>Anybody ever made any sort of measuring device for measuring the back >pressure
>in a cooling system for a transmitting tube?

Eimac frequently shows a manometer for measuring backpressure. A manometer is similar to a barometer in that it is a u-shaped tube of fluid, usually water, with the "free" end open to atmosphere and the "business" end attached to the pressurized compartment.
The tube is only partially filled with water, to fill in the "U". Not so much to spill into the pressurized compartment!
With the compartment pressurized, the difference in the levels of the water in the tube are a measure of the backpressure in the compartment. The exact calculation of pressure depends on the cross-sectional area of the tube and (i guess) the barometric pressure at the time of measurement.
I can send you some copies of Eimac application notes if you're interested.
scott nx7u

1257. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 08:15:46 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994May25.081546.16868@ke4zv.atl.ga.us>
Source record: 117700

In article <1994May23.143229.2676@ccd.harris.com> drs@ccd.harris.com (Elie Nasr) writes:
>I hesitate to post to this group anymore - I seem to get responses indicating
>that I should know all the answers since I have an extra class license.

Gee, you have an Extra class license, you should know all the answers. :-)

>Anybody ever made any sort of measuring device for measuring the back pressure
>in a cooling system for a transmitting tube? I have seen references to things
>like so many cubic feet of air flow. Or .6 inches of backpressure. Or does
>everyone just make sure they are running a blower that is over-rated just to
>be safe? I'd prefer to do it right, since the bigger the blower, the more
>noise present in the shack. Unless I put the blower in a different room! If
>this is the sort of thing that interests others, you might post your comments
>here rather than direct to me. Thanks....

There are many ways to measure flow, but the approach generally taken
with air system sockets of known flow restriction is to measure back
pressure. That can be easily done with a device called a manometer.
You can make one simply from a piece of clear flexible plastic tubing,
a ruler, and some water. Form a U shaped tube partially filled with
water. Leave one end of the tube open to atmosphere and run a flexible
tube from the other end to a sampling point in the input compartment
of the amplifier. Measure the difference in height of the water in
the two legs of the tube. This is the overpressure in the input compartment.
Now move the probe to the output compartment and measure again. The
difference between the two readings is the pressure drop through the
air system socket. It should not exceed manufacturer recomendations for
the tube in use. (Back pressure is given in inches of water for air
system sockets.)

Measuring air velocity is another method of estimating CFM, but is
generally less reliable. A cup anemometer could be used, but it
would give inaccurate results for flows near the edges of the duct.
However, a vane system is often used strictly for alarm purposes.
This is just a paddle placed in the airstream such that the air
supports it's weight preventing it from closing a microswitch. If
flow drops enough, the weight of the vane closes the switch and
shuts down the transmitter. Alternately, the flow could be used
to keep the microswitch closed and loss of flow allowing the vane
to drop and allow the switch to open. Optical sensing of vane
position can also be used. If your amplifier needs forced air
cooling, some sort of flow based sensor should be used to protect
the system in the event of air system failures.

What you are really interested in, of course, is the temperature of
the tube seals. You can measure this directly in one of several ways.

Probably the easiest way is with a glass thermometer probe, but there are also thermal paints that can be used. These change color at a specific temperature. Paint a dab on the area to be measured, operate the equipment, and note the color change. Look up the color on the temperature conversion chart that comes with the paint, and there you are.

BTW, divorced blowers are a very good way to reduce noise in the operating area. Like a central vacuum cleaner system, they put the noisy blower a good distance away from the operator. Just remember to use large, low restriction, ducting to prevent excessive flow restriction. (4 inch dryer vent hose works well)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1258. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 09:13:50 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994May25.091350.30466@ucl.ac.uk>
Source record: 117708

In article <1994May23.143229.2676@ccd.harris.com> drs@ccd.harris.com (Elie Nasr) writes:
>
>Anybody ever made any sort of measuring device for measuring the back pressure
>in a cooling system for a transmitting tube? I have seen references to things
>like so many cubic feet of air flow. Or .6 inches of backpressure. Or does
>everyone just make sure they are running a blower that is over-rated just to
>be safe? I'd prefer to do it right, since the bigger the blower, the more

Measuring back pressure is fairly easy, using a manometer. A tube (> 4mm id) is bent in a U. Stich one end, into the pressurised volume, as right angles to the fan. Fill manometer with water, then measure height difference between sides. See the book "are and feeding of power grid tubes", by Eimac, which you can get from a Varian distributer.

PS

If you put an elastic band around tube anode, which holds a microswitch closed, then if the fan fails, band melts, microswitch opens ......

davek

1259. Motorola GPS engine purchase information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 18:21:22 UTC
From: bonomo@specxn.enet.dec.com
Message-ID: <1994May25.182122.12722@nntpd2.cxo.dec.com>
Source record: 117695

Greetings, one and all!

This message is ASCII text, formatted as <CR> at =<78 characters, tabs at +8.

Have finally received "everything" which I will obtain from Motorola and Trimble, and the order requests have dwindled to a minimum, I have attached the specifications and pricing below.

In a nutshell, the Motorola unit is better in every way, excepting three factors. The Trimble unit:

1) is about 1/8" smaller in width and height,
2) is about .6 ounce lighter,
3) consumes less power in standby, quoted as ~2uA nominal, versus the Motorola's stated maximum of 60uA.

Other than that, the Motorola VP Oncore engine is superior in all ways, including price. The recommendation, from my perspective, is to choose the Motorola unit, but your choice may vary. The above factors, in which the Trimble unit is superior, may be significant ones for you.

I have had requests from 375 individuals, from nine countries, for over 435 units. All this is, of course, based on a "$150" purchase price, which is not available.

Understanding this, it seems best if there is a "standard" configuration which is ordered, as the pricing given is for quantities of 100 and greater. If 100+ want the options, we'll order those, too. Remember, all prices are for 100+ units per item. In other words, if 25 units are wanted with the LNA option, the pricing for that LNA option will be be somewhat higher than the figure quoted below, and I'm not sure if Motorola can (or will) handle one-sie, two-sies and get it right.

****
The recommended "standard" configuration:

Item Price / each (includes Colorado State sales tax)

VP Oncore engine $268
Active Antenna $ 70
Cable to antenna $ 22

Total "standard" $360

****

Options to be considered:

LNA $ 16
battery $ 11

Shipping within the continental U.S., via 2nd day service, will run $10. This includes a box, packing foam and shipping charges. This figure is good for up to ten units.

Those interested in this group purchase should remit monies to the name and address below. Please send non-cash such as personal checks, money orders or the like, as it allows records to be kept much more easily. If less than 100 orders are placed, the checks/money orders will be destroyed, rather than incurring the cost of returning up to 100 of them. Alternately, if you want your check returned in the event of an insufficient number of units ordered, add a dollar bill to cover the cost of an envelope, stamp and my or my wife's writer's cramp which will inevitably result. If the order threshold is reached and an order is placed with Motorola, the $1 will be returned to you with your order. Please include a very complete address to which the order may be sent. Include your current Internet address and telephone number(s) where you may be reached, as well. I've experienced several Inet addresses which have bounced, by the way, so if you didn't receive a response from me directly, it was attempted.

Send orders to:

Thomas A. Bonomo
8147D Summerset Drive
Colorado Springs, Co. 80920.6123

I can be reached, and have been by several individuals, at:

Telephone: (719)593.9883 Home (evenings, weekends)
(719)592.5105 Office (weekdays)
Internet: tom.bonomo@cxo.mts.dec.com

This message will be posted to the newsgroups, as well.

Thanks for your patience as I've gathered information and responded to each of your requests.

Regards,

Tommy

Specifications and pricing information follows.

/\

/\

Motorola VP ONCORE SPECIFICATION DATA SHEET

Receiver Architecture
----
o 6 channel

o L1 1575.42 MHz
o C/A code (1.023 Mhz chip rate)
o Code plus carrier tracking (carrier aided tracking)

Tracking Capability
---
o 6 satellite vehicles simultaneously

Dynamics
---
o Velocity: 1000 m/s when altitude less than 18 km
o Altitude: 18 km for velocities greater than 514 m/s
o Accelleration: 4 g

Antenna
---
o accepts active and passive antennas

Acquisition Time

(TTFF = Time To First Fix)
o 22 sec. typical TTFF (with current almanac, position, time and ephemeris)
o 48 sec. typical TTFF (with current almanac, position and time)
o 2.5 seconds typical re-acquire

Accuracy
---
o Position: less than 25 meters, SEP (without SA).
DoD may invoke Selective Availability (SA), potentially degrading accuracy to 100 meters (2 dRMS)

DATUMs
---
o 49 std. datums, 2 user defined, default WGS-84

Signal Level
---
o TTL

Output Messages
---
o Latitude, longitude, height, velocity, heading, satellite tracking status (Motorola Binary Protocol)
o NMEA-0183 Version 2.00 (GGA, RMC, GLL, GSA)
o LORAN emulation mode
o Software selectable

Operating voltage
---
o 4.75 - 5.25 VDC, 50 mVp-p ripple

Operating current
----
o 230 mA typical @5V, 275 mA max at 5.25V

Standby voltage
----
o 2.5 - 5.0 VDC

Standby current
----
o 60 ua max

Dimensions
----
o 2.00" x 3.25" x .64" (50.80mm x 82.55mm x 16.26mm)

Weight
------
o 1.9 oz. (53.9g)

Connectors
----
o Digital: 10 pin (2 x 5) header on .100" centers
o RF: right angle OSX (sub-miniature snap-on)

Operating Temperature
----
o -30 - +85 degrees C (without on-board battery)
o -20 - +60 degrees C (with on-board battery)

Storage Temperature
----
o -30 - +85 degrees C (without on-board battery)
o -20 - +60 degrees C (with on-board battery)

Humidity
----
o 95% RH, non-condensing

Vibration
----
o 7.7 g, random (survivability)

MTBF
----
o >61,000 hours (estimated)

Optional features
----
o Lithium battery
o Low Noise Amplifier
o Real Time Clock

Pricing (includes Colorado state sales tax)

VP Oncore engine $268
Active Antenna $ 70
Cable to antenna $ 22
Low Noise Amp $ 16
Lithium Battery $ 11

Development Software
1st option $270
includes:
Raw code phase,
disc data,
smooth sat time,
carrier phase

2nd option $215
includes:
above without
carrier phase

/\

/\

Specifications for Trimble SVeeSix GPS engine

Model: SVeeSix-CM2

General

L1 Frequency, C/A code (SPS), 6 channel, continuous tracking receiver

Update Rate

NMEA - 1Hz

Accuracy

Position: 25m without SA
Velocity: 0.1m/s without SA
Time: 1 us (nom)

DGPS Accuracy

Position: 2m to 5m (2 sigma)
Velocity: 0.1m/s
Time: 1 us (nom)

Acquisition (typ)

```
Cold Start: 2 to 5 minutes
Warm Start: 50 sec with time upload
Hot start: 30 sec with time upload

Reaquisition
------------
<2 sec

Dynamics
---------

Velocity: 500 m/sec max
Acceleration: 4g
Jerk: 20m/sec^3

Environmental Specs.
--------------------

Operating temp: -10C to +60C
Storage temp: -55C to +100C
Vibration: 0.008g^2/Hz 5Hz to 20Hz
0.05g^2/Hz 20Hz to 100Hz
-3dB/octave 100Hz to 900Hz

Operating Humidity: 5% to 95% RH non-condensing @+60C
Altitude: -400m to +18000m

Physical Characteristics
------------------------

Dimensions: 3.25" x 1.83" x 0.58"
Weight: 1.3 oz. (36.4g)
Connectors: RF: SMB, I/O: 8 pin (2x4), 2mm header

Technical Specifications
------------------------

Prime power: +5Vdc (-3% to +5%)
Power consumption: 280 ma, 1.40 watts
Backup power: +3 to +5 Vdc
Backup consumption: 1 uA @3V and +25C (nom)
Serial port/1PPS: CMOS TTL
Protocol options: TSIP @9600 baud, 8-O-1
NMEA 0183 v2.0 @4800 baud, 8-N-1
TAIP @4800 baud, 8-N-1

NMEA messages: Standard: GGA,VTG
Optional: GGA,GLL,VTG,ZDA,GSA,GSV,RMC

Pricing (includes Colorado state tax)
--------------------------------------

SVeeSix CM2, DGPS capable $321
Antenna (includes cable) $118

/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\
```

1260. Re: Ham-Homebrew Digest V94 #129

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 18:49:01 UTC
From: dcon@cc.bellcore.com
Message-ID: <dcon-250594142324@128.96.71.70>
Source record: 117693

In article <Pine.3.89.9405181450.A18449-0100000@paul.spu.edu>,
lmelton@paul.spu.EDU (Lyle D. Melton) wrote:
>
> In response to the question about telephone voltages in Europe....
>
>
> I just returned from a 3 yr stay in Italy and used our U.S. phones
> without problems. If that helps... they are probably the same.
>
One thing to note about the European telephone systems, what works in one
country may not work in another. While there are international standards,
they are not always implemented in every country.

"Typical" European values for telephone set operating parameters are:

Common Battery Voltage -48V dc
Operating Current 20 to 80 mA
Subscriber Loop Resistance 0 to 1300 Ohms
Loop loss 8 dB
Ringing Signal 16 to 50 Hz, 40 to 130 V rms

These are basically the same as in the U.S. Again, these represent
"typical" values and may vary among different European countries.

Another thing to think about is dialing. Dual Tone Multi-Frequency (Touch
Tone) dialing is not very common, even in some of the more advanced
countries. The pulse dialing in many countries is probably similar to the
U.S., but don't assume this is true everywhere.

Bottom line: Most U.S. phones using pulse dialing will work in most
European countries.

P.S. Notice that I didn't define Most ;-)

--
Daniel J. Connolly
dcon@cc.bellcore.com
Bellcore
(These are my words, not Bellcore's)
--

1261. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 19:01:49 UTC
From: ren@rap.ucar.edu
Message-ID: <2s07at$rbr@ncar.ucar.edu>
Source record: 117696

In article <1994May23.143229.2676@ccd.harris.com> drs@ccd.harris.com (Elie Nasr) writes:
>I hesitate to post to this group anymore - I seem to get responses indicating
>that I should know all the answers since I have an extra class license. Anyway:
>
>Anybody ever made any sort of measuring device for measuring the back pressure
>in a cooling system for a transmitting tube?
>
A lot of folks have told you about U-tubes and manometers.
Chapter 15 pp15-18 of the 1990 ARRL Handbook also covers this.
Under the section 'Amplifier Cooling'.
What you're an Extra and don't have an ARRL Handbook?
B^)
Best of best regardes!
ren N0PVI
dona nobis pacem
'just a hitchhiker on the Information Spark-Gap'

1262. rec.radio.amateur.homebrew

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 19:26:15 UTC
From: heiss@ualr.edu
Message-ID: <1994May25.132615.1@eivax.ualr.edu>
Source record: 117697

In article <2rselg$d9g@anshar.shadow.net>, keogh@anshar.shadow.net (Matt Keogh) writes:
>
> ******** ** *** **** ******** ******** ** ** ******** **** ********
> ******* ******* ** ** ** ** ** *** *** ** ** ** ********
> ******* ******* ** ** ** ** ** ***** ** ** ** *******
> ******** ** *** **** ** ** ** ** *** ******** **** **
>
> *** THIGH CREAM ***
>
> The ORIGINAL thigh cream, as seen on national TV
> This is the NEW, SUPER STRENGTH formula
> Accept none of the immitation creams
> YOU'RE WORTH THE BEST!!!
>
> Now only $29.95 per bottle which INCLUDES shipping, handling and tax
> U.S. orders only, please. Rush check or money order to:
>
> U.S. Health Inc.
> 18524 NW 67th Ave. #311
> Miami, Florida 33015
>
>
>
--
How can we stop stuff like this? I know it is probably not illegal but it
should be.
****

Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail heiss@ualr.edu
KC5CVL

****

1263. SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 20:16:53 UTC
From: elendir@enst.fr
Message-ID: <2s0bnm$ee3@cismsun.univ-lyon1.fr>
Source record: 117698
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello !

I'm (still) planning to build a multimode multibander (VHF/UHF) rig.
In the course of designing the SSB part, I am of course facing the
problem of filtering the unwanted LSB.
I've talked on the air with several hams that seem pretty positive that
it is no more possible to find SSB Xtal filters in France.
Does someone have any clue regarding a possible US source for these ?
What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
fit also.

Thanks !
Vince, Fox 1 Romeo Charly Sierra

1264. Converting an old HT-220 to 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 20:33:49 UTC
From: usenet@oracle.us.oracle.com
Message-ID: <1994May25.203349.11883@oracle.us.oracle.com>
Source record: 117699
Cross-posted to: rec.ham-radio,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.
It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is
crystal controlled. I would like to convert this to 2 meter. Does anyone
know how I can do this? I should be able to swap out crystals, shouldn't I?
The numbers on the crystals (as best as I can tell) are:

xmit: 18170.8
rcv: 48912.50

What do these numbers mean and how are they related to the transmit
and recieve freqs? There is also a "PL Reed" that I will probably need. What
is this? Motorola wants $90 I DON'T THINK SO!. I'd like to substitute with
something a little less pricey.
Last (and least?) I need a charger for the Ni-CAD. I'd like to build
it myself. Any plans out there?

I live in Columbus Ohio but I travel extensively. I will soon be in
the Detroit Michigan area, anyone up there that can help me? Please respond
via email as my access to news is erratic.

My email address is:
dmarsh@oracle.us.com

So many questions, so few answers.

Doug N8TUT

1265. IC-Master 1994 (Re: What are these chips?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-25 22:19:22 UTC
From: anis@axil.com
Message-ID: <1994May25.221922.1607@axil.com>
Source record: 117584

Just wanted to mension that I have a set of 1994 , just published IC Master
which is compilation of all IC's and their sources and am willing to part
with it for $150 including postage. If you order it today it would cost
you around $200.If interested just drop me a line , I can swap it for
a good SW portable radio as well.

anis

1266. Re: rec.radio.amateur.homebrew

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 00:06:14 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2s0p5m$7lm@hobbes.cc.uga.edu>
Source record: 117704

In article <1994May25.132615.1@eivax.ualr.edu> rec.radio.amateur.homebrew writes:

>How can we stop stuff like this? I know it is probably not illegal but it
>should be.

In my opinion (and I'm chairing an administrative committee concerned with
such things), it *is* illegal: it's unauthorized computer access.
It is perfectly clear that this newsgroup is for discussing amateur
radio, not for advertising thigh cream. Thus, Mr. Keogh was using
numerous computers without permission (i.e., in a manner not permitted).

If it had happened at my site, I'd prosecute him under applicable laws.

Further discussion on administrative newsgroups such as news.admin.policy.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1267. Re: rec.radio.amateur.homebrew

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 00:17:52 UTC
From: edbu@sepia.wv.tek.com
Message-ID: <2s0prgINN1ne@sepia.wv.tek.com>
Source record: 117703

I have seen an increase of this noise recently, and would like to see
a stop to it also. So far, sending a friendly reminder that internet
is a non-commercial environment seems to help. The problem as I see
it is that so many new users are unfamiliar with the net, that they
treat it like a bulletin board. A few times, for the really bad repeat
offenders, I have reverted to sending them information on my friends
AMWAY products...several times a day...or sending a few core files that
I have been unable to figure out...;-) Even with all the nonsense posted
from these folks, the signal to noise ratio is still good enough to read
this group. Maybe we should ALL mail our core files and advertisements
to them....and their sysadmins...and don't you think they could benifit
from a few extra termcaps...Oh well, probably not. Just kidding ;-)

On a topic more related to the group, I have been making circuit boards
now for quite awhile using the direct iron on method from a laser printer.
So far it has worked for digital as well as RF and Video circuitry.
If anyone is interested, I am preparing information on how to do this.
I know that this topic has been discussed before, but I have a few twists
to add that have helped me quite a bit. (surface mount at home anyone?)

Oh well, have to go regenerate my pay now........

1268. DDS Suplier Info Required

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 01:06:47 UTC
From: 100026.3446@CompuServe.COM
Message-ID: <940526010646_100026.3446_FHH83-1@CompuServe.COM>
Source record: 117705

Hi there... I am wanting to build a DDS & DSP HF radio for my Electrical Engineering Degree thesis also doing some experimenting with HF Frequency Hopping Spread Spectrum - Which is not prohibited here in Australia.

To do this I was wanting to use the Qualcomm Q2220 Chip in association with the Techno-Wizzy One DDS VFO module from Elktronics-NE as mentioned in 73 Amateur Radio Today in December 1992. My father in in the USA at the moment so I arranged for him to purchase he parts although he reports something about the number being changed. Does anyone have an up to date address for this company or for any other companies selling a similarly priced kit?

Responces should usually be sent to drsmith@acacia.itd.uts.edu.au or 100026.3446@compuserve.com.

Many Thanks

Darryl VK2TDS
Sydney, Australia
Treasurer - University of Technology, Sydney Amateur Radio Society.

1269. How to make an RF amplifier.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 02:58:17 UTC
From: sebelt01@starbase.spd.louisville.edu
Message-ID: <2s1389$b6i@hermes.louisville.edu>
Source record: 117712

I'm interested in building a small amplifier to raise a milliwatt
signal to 1-5 watts. Could someone send me some info, or direct me to some
ftp/gopher/www sites?
Also appreciated would be the maximum output RF allowed in the 49 MHz
and FM broadcast bands. Thanks for the help.

1270. Re: SEARCHING FOR LOW POWER FM TRANSMITTER for BROADCAST BAND

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 04:17:32 UTC
From: fflynn@delphi.com
Message-ID: <5W+OmGU.fflynn@delphi.com>
Source record: 117577

Ramsey electronics has some cheap FM xmitter kits, they have a stereo transmitter too, based on the BA1404 chip, this chip is s a stereo generator, modulator and RF amp in a single package, puts out about 2mw by itself, but the ramsey kit hasas a transisto
r RF amp that kicks it up to 20 mw or so , I have one, works great.

1271. Re: Converting an old HT-220 to 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 05:48:01 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCqEAs2.2pC@netcom.com>
Source record: 117702
Cross-posted to: rec.ham-radio,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994May25.203349.11883@oracle.us.oracle.com> usenet@oracle.us.oracle.com (Oracle News Poster) writes:
> I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.
>It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is
>crystal controlled. I would like to convert this to 2 meter. Does anyone
>know how I can do this? I should be able to swap out crystals, shouldn't I?
> The numbers on the crystals (as best as I can tell) are:
>
> xmit: 18170.8
> rcv: 48912.50
>
these are the crystal freqs in KHz. the xmit crystal is 1/9th the xmit freq.

The recieve crystal freq = (recieve freq - 16.8MHz)/3 The 1st if is 16.8MHz. 2nd is 455KHz.

You'll have to tweak the front end recieve LC circuits some, but don't touch the IFs. And tweak all the xmit LCs. How to tell apart? You should get the service manual. Mine refers to H23ff...., so yours may differ some. You might need to add some tiny caps (both physically and in the pF range) to get the LCs down from 163 to 146.

There is also a "PL Reed" that I will probably need. What
>is this? Motorola wants $90 I DON'T THINK SO!. I'd like to substitute with
>something a little less pricey.
If the reed is "4A", it may be compatable with the local repeaters. or the reed circuits could be removed, but there's some small change to make to the squelch.

As for the NiCads, I wouldn't be suprised that they might be dead now. I mean not chargable anymore.

I've been using an HT220 board or my packet radio, crystaled on 145.07MHz. Coupled with a small power amp stage to generate about 8Watts. It's been going for 5 or more years in this service, and the friend who gave it to me had it this way (different freq's for voice work) ten or more years before. It just keeps on going.... We run it off a power supply, and I'm using a J pole antenna.

1272. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 11:26:38 UTC
From: zlau@arrl.org
Message-ID: <1994May26.112638.1505@arrl.org>
Source record: 117715
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Elendir F1RCS (elendir@enst.fr) wrote:
: I'm (still) planning to build a multimode multibander (VHF/UHF) rig.
: In the course of designing the SSB part, I am of course facing the
: problem of filtering the unwanted LSB.
: I've talked on the air with several hams that seem pretty positive that
: it is no more possible to find SSB Xtal filters in France.
: Does someone have any clue regarding a possible US source for these ?
: What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
: 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
: fit also.

10.7 MHz SSB filters are rather unusual. However, I'm surprised that
amateur dealers don't sell useable filters. In the USA, you can often
buy optional filters to put in your amateur transceiver to get a different
bandwidth than what the radio came with.

However, the trend is to *make* your own filter out of microprocessor
clock crystals. For roughly $10 worth of crystals, you can make a
decent filter and have some crystals for the oscillator(s). They
even sell 9 MHz crystals.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1273. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 12:06:13 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CqEsAD.1z4@hpqmoea.sqf.hp.com>
Source record: 117710
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I know of one world-class crystal filter manufacturer based in
France, C.E.P.E. part of Thomson-CSF. I've got one in front of me
now, but no address.

The highest reptation filters in amateur circles are German
KVG Kristall Verarbeitung Neckarbischofsheim GMBH
Postfach 61 D-6924 Neckarbischofsheim
Telefon 07263/648-0

John Birkett
25 The Strait
Lincoln
LN2 1 JF
England

Tel +44 522 520767

Often has surplus crystal filters in stock. I've bought a number of
marine quality 1.4 MHz IF usb, lsb, cw filters from him

The best advice is to first find your filters, then use IF to suit.

Recently a lot of 1.4 MHz IF filters of superb performance have
flooded onto the British market at very low surplus prices (I paid the
equivalent of 40 francs each, although the prices fluctuate) Filters
for AM RTTY and various CW bandwidths are also to be found as well as
proper separate USB and LSB ones. I think of good government surplus
components as a sort of tax refund!

Bon Chance!

David

1274. Re: pcb laser printer iron method

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 13:09:13 UTC
From: kirkland@bnr.ca
Message-ID: <2s271p$5tn@bmerha64.bnr.ca>
Source record: 117706

I am very interest in what you have to say about using the direct iron on method from a laser printer.

Bill Kirkland

1275. Re: Converting an old HT-220 to 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 13:21:04 UTC
From: crispy@space.mit.edu
Message-ID: <2s27o0$9i1@senator-bedfellow.MIT.EDU>
Source record: 117707
Cross-posted to: rec.ham-radio,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

By the way, I have 5 Motolora HT-220 for sale. I would like $35/ea or 150/all.

For more info, e-mail to crispy@space.mit.edu.

thanks,

Christopher S. Pak
Massachusetts Institute of Technology
Center for Space Research
37-487
77 Massachusetts Ave.
Cambridge, MA 02139
Phone: (617)253-9342
Fax: (617) 253-0861
E-mail: crispy@space.mit.edu

1276. How can I reduce RFI from flourescent lights?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 15:50:20 UTC
From: philkeys@olympus.net
Message-ID: <philkeys-260594075020@ptpm004.olympus.net>
Source record: 117709

I have a beach cabin with solar panels & batteries for
power. I use 12VDC flourescent lights in each room
(made by REC Industries) with electronic ballasts.
When the lights are turned on I get all kinds of squeals
in the AM & SW bands. The 12 V negative line common to
the solar panels & battery is grounded with a 10 foot
ground rod (but driven into dry sand).

Any ideas how to quiet these lights? Now I have to
turn them off to use the radio.

Also does anybody have experience with the small 12VDC
to 120 VAC inverters (100W-200W)? Do they generate RFI also?

Thanks & 73
(these ham newsgroups are great, full of the latest info.)

--
philkeys@pt.olympus.net (Phil Keys) KB7WXQ
Software Consultant - specializing in software safety & SQA
Port Hadlock, WA 98339 (206) 379-8650
West of Puget Sound.....South of British Columbia.... 122 44.0W 48 02.0N

1277. Re: How can I reduce RFI from flourescent lights?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 16:58:42 UTC
From: rossi@VFL.Paramax.COM
Message-ID: <1994May26.165842.861@VFL.Paramax.COM>
Source record: 117711

In article <philkeys-260594075020@ptpm004.olympus.net> philkeys@olympus.net (Phil Keys) writes:
>I have a beach cabin with solar panels & batteries for
>power. I use 12VDC flourescent lights in each room
>(made by REC Industries) with electronic ballasts.
>When the lights are turned on I get all kinds of squeals
>in the AM & SW bands. The 12 V negative line common to
> the solar panels & battery is grounded with a 10 foot
>ground rod (but driven into dry sand).
>
>Any ideas how to quiet these lights? Now I have to
>turn them off to use the radio.

That's why you need those tube radios that "glow in the dark" ;-)

[sorry I couldn't resist]

==========
Pete Rossi - WA3NNA rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania
==========

1278. Re: Converting an old HT-220 to 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 18:20:17 UTC
From: randolph@est.enet.dec.com
Message-ID: <CqF8F2.GI3@ryn.mro.dec.com>
Source record: 117714
Cross-posted to: rec.ham-radio,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994May25.203349.11883@oracle.us.oracle.com>, usenet@oracle.us.oracle.com (Oracle News Poster) writes...
> I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.
>It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is
> xmit: 18170.8

The transmitter in these uses freq. triplers to get up from the xtal freq. to TX freq. 18170.8 x 3 x 3 = 163537.2. Mine is a 462 MHz unit that has one more tripler to get up there.

> rcv: 48912.50

Let's see... receive xtal = (Tx freq - IF freq) / n; where n = 3,9,27 etc. Using n=3 we get an IF of 16.8 MHz, which sounds reasonable. International Crystal Mfg. has crystals for these radios - call them at 405 236 3741 and tell them what you have. You may need model number and "chassis number" which is a number like NUE6001BA that you can find inside the battery compartment. The xtals are a bit pricey - $15 to $25 each, but what the heck, I only paid $10 for the radio at a flea. You will need to re-tune the tuned circuits in the radio, and for this you will need the Motorola manual... try Motorola or a local service shop for that. I copied the 450-488 MHz radio manual that another ham here had around. Make sure whoever knows you are re-tuning to a ham band, or else they'll want to know your commercial license #!

By the way, I have a line on cheaper crystals from a different source, still waiting for someone to get back to me on that.

>There is also a "PL Reed" that I will probably need.

This is pre-microprocessor coded squelch technology. A tiny mechanical reed functions similar to a quartz crystal, except at audio freqs. If you're going to use the HT to get into a repeater with PL tone access you need it, otherwise you don't, like for simplex. Mine came with one, but you could always add one of those tiny PL decode/encode boards from the back of QST.

> Last (and least?) I need a charger for the Ni-CAD.

Yah, these radios typically are placed in a "drop-in charger" which does the job. I'm not sure how I'm going to handle this myself... The battery that came in mine was good, though, and charged up to 15V no problem. Pick up a spare at a flea, as Moto wants something like $75 for them.

> Doug N8TUT

Good luck with the mods! I'll be doing mine as soon as I find out about those cheap xtals! Makes an interesting project...

-Tom R. N1OOQ randolph@est.enet.dec.com

1279. Re: Transmitting Tube Cooling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 20:58:34 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994May26.145834.1@ccsvax.sfasu.edu>
Source record: 117716

In article <1994May23.143229.2676@ccd.harris.com>, drs@ccd.harris.com (Elie Nasr) writes:
> I hesitate to post to this group anymore - I seem to get responses indicating
> that I should know all the answers since I have an extra class license. Anyway:

Gosh, that's daunting. I have an extra ticket, too, and I know almost none of
the answers.
>
> Anybody ever made any sort of measuring device for measuring the back pressure
> in a cooling system for a transmitting tube? I have seen references to things
> like so many cubic feet of air flow. Or .6 inches of backpressure. Or does
> everyone just make sure they are running a blower that is over-rated just to
> be safe? I'd prefer to do it right, since the bigger the blower, the more
> noise present in the shack. Unless I put the blower in a different room! If
> this is the sort of thing that interests others, you might post your comments
> here rather than direct to me. Thanks....
>
> 73's Doug

I guess you could build some equipment to measure airflow or back pressure, but
actually I think that's usually done by the blower manufacturer and reported as
a design spec. In practice, what I've always done when building high power
amplifiers is to use blowers similar to those I see in others' similar
equipment. Not scientific, but it's usually worked.

And, yes, I've been in a few shacks in the old days where the final amp was in
a separate room to keep the noise down. Some of those folks invested a good bit
of effort in remote tuning gear, too.
>
>
> --
> ---------------------------
> | Doug Snowden |
> | N4IJ |
> | email: drs@ccd.harris.com |
> ---------------------------
>

Cheers & 73!

Jim K5YUT

1280. Help needed for external 22AT power

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-26 21:52:42 UTC
From: mmurray@leroy.cc.uregina.ca
Message-ID: <1994May26.215242.15420@sue.cc.uregina.ca>
Source record: 117582

My Kenwood 22AT has only one external power input jack located on
the side of the radio. Kenwood supplies a 12.5V 70ma adapter to
use with the unit. The adapter charges the battery but does not
have enough current to transmit with. I am planning on building
a simple 12V 3A power supply to used with the radio. My concern is
that I will be over charging the internal 6Volt 600ma battery.
Should I be removing the battery when using an external high current
power supply? Kenwood does not show a external AC power supply as
an option for this radio, but they do have a car adapter- which
could cause overcharging of the battery. Kenwood recommends a max
of 15 hours using the 12.5V 70ma charger.

Any suggestions?

Thanks in Advance.

Mike Murray
mmurray@leroy.cc.uregina.ca
VE5EF

1281. Re: How can I reduce RFI from flourescent lights?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 13:54:41 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s4u31$cq9@ohlone.kn.PacBell.COM>
Source record: 117570

```
Pete Rossi (rossi@VFL.Paramax.COM) wrote:
: In article <philkeys-260594075020@ptpm004.olympus.net> philkeys@olympus.net (Phil Keys)
writes:
: >I have a beach cabin with solar panels & batteries for
: >power. I use 12VDC flourescent lights in each room
: >(made by REC Industries) with electronic ballasts.
: >When the lights are turned on I get all kinds of squeals
: >in the AM & SW bands. The 12 V negative line common to
: > the solar panels & battery is grounded with a 10 foot
: >ground rod (but driven into dry sand).
: >
: >Any ideas how to quiet these lights? Now I have to
: >turn them off to use the radio.

: That's why you need those tube radios that "glow in the dark" ;-)

: [sorry I couldn't resist]

: ==================================================================
: Pete Rossi - WA3NNA rossi@vfl.paramax.COM

: Unisys Corporation - Government Systems Group
: Valley Forge Engineering Center - Paoli, Pennsylvania
: ==================================================================

What you might do is go out scavenging the ferrite loopsticks from old AM
radios. Then wind a couple dozen turns of zip cord on them and tape them
up. Connect the incoming line to one side, and the fluorescent light
fixture to the other. It should reduce the RFI somewhat.

But it depends on how close the receiver is to the fixtures. If the
fixtures themselves are radiating, then the only thing to do is replace
them with an incandescent lamp, or something similar. Maybe Kerosene?

Maybe a few capacitors across the incoming wires in each fixture might
help.

--
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ Standard @
@ Rancho Santiago Community College District @ disclaim- @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ ers apply.@
@ Voice (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
```

1282. Re: Need help on inductor winding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 14:08:14 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s4use$cq9@ohlone.kn.PacBell.COM>
Source record: 117568

white@ccsua.ctstateu.edu wrote:

: I'm building the RadioKit QRP-20 kit. The manual calls for inductors
: with "2-T links"..... what does that mean? Does it mean a 2-turn
: secondary? Thanks, and if anyone has info on winding inductors (esp.
: the oddball subminiature inductor for the 7MHz Optimized Transceiver),
: I would appreciate a lead on where to find it.
: 73 de N1QVE
: Harry

You didn't give much info on what inductor, or where it was in the
circuit. You guessed about right. 2 turn links from one tank to another
sound about right.

Remember that some of the projects have been purposely made with
components that are hard to come up with except by buying them from the
project author. Some authors sell just a circuit board, and also the
hard-to-get parts. After all, they want to make money, even without too
many scruples. THey figure the buyer will be back for the hard to
get/make parts.

Remember, the first rule of project building is to get _all_ the parts
first. Right there... In your hand. Then you can start assembling.

--
@@
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@ 17th St. at Bristol \ Santa Ana, CA 92706 @ ers apply.@
@ Voice (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@

1283. Re: Proper way to bias a tunnel diode?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 14:59:36 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s51so$cq9@ohlone.kn.PacBell.COM>
Source record: 117571

Dave Jacob (jacob@altair.csustan.edu) wrote:
: know tunnel diodes are an extinct species, hence the trouble
: I am having locating circuits for them, but does anyone out there
: know how to bias these little demons so that they remain stable?
: I need to bias them at 0.15 volt, so that after applying a
: 0.05 volt modulating voltage they remain near their peak tunnel
: current, without strange things happening.

: Any help appreciated.
: Dave.

I'm checking the GE Transistor Manual, Rev 7th Ed, Chap 14. They show a 10 to 22 ohm resistor to ground from the TD cathode lead. This resistor must be less than the TD negative resistance. Also from the same lead, a 250 ohm pot (wiper arm connected to one end) in series with a ten ohm resistor which goes to a 1.5 volt cell.

Most schematics are using the 1N3712. They show several converters which seem simple in design. With cavities these TDs can go up to several GHz or more.

--
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@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@

1284. Re: Modification of walkie talkies..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 15:10:14 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s52gm$cq9@ohlone.kn.PacBell.COM>
Source record: 117572

sebelt01@starbase.spd.louisville.edu wrote:

: I want to modify a pair of (cheap) walkie talkies to have greater range. I
: have three things in mind:

: 1 - Improve the antenna: 49.860 / 468 = 9.4 ft. Will a 9.4 ft length of wire
: do the trick? What gauge is _best_?

The FCC walkie-talkie rules used to say that the antenna was limited to 1
meter to be legal.

: 2 - Get rid of some resistors. It seems that there is a resistor right
: between a very small coil and the antenna. I'm not sure of it's purpose (does
: it just reduce the output power, or limit interference, or protect something
: in the transceiver? The resistor is labeled L2, with the coil before it
: labeled L1. (Which makes me thing it has somethign to do with tuning or
: interference).. If I remove this will my signal become stronger? (where I'm
: using these interference will be virtually no problem).

The L stands for inductor. It's probably for matching the short antenna
to the output stage. Also, it's probably a low pass filter, to reduce
harmonics.

: 3 - Add an amplifier. How hard is it to amplify the signal? Is it just a
: matter of adding on a resistor, or is such a circuit more comples. Again,
I'm
: not too worried about causing interference where these transceivers will be
: used, but I need to make them as powerful as possible.

The usual walkie-talkie is a single stage with the crystal and antenna
all connected. Cheap. But you could build another stage and put it
between the antenna and existing stage. You would have to find somewhere
to put it inside the radio, though.

Some people have reduced the resistors in the existing transmit stage to
get a little more power. But in doing this, it sometimes adds power to
the harmonics, and not to the frequency you want, the fundamental.
Another thing that's a problem is the reduced battery life. The battery
is just too small in these walkie-talkies.

: Thanks for any help/suggestions/whatever. Please respond by mail if at all
: possible, I will post a summary in the form of a how-to, if I can get this to
: work.

--
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@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@@

1285. Re: rec.radio.amateur.homebrew

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 15:12:59 UTC
From: SPIKE@EESTAFF.watstar.uwaterloo.ca
Message-ID: <SPIKE.187.2DE60DFB@EESTAFF.watstar.uwaterloo.ca>
Source record: 117574

```
In article <1994May25.132615.1@eivax.ualr.edu> you write:
>From: heiss@ualr.edu
>Subject: rec.radio.amateur.homebrew
>Date: 25 May 94 13:26:15 CST
edited >--
>In article <2rselg$d9g@anshar.shadow.net>, keogh@anshar.shadow.net (Matt Keogh) writes:
>> *** THIGH CREAM ***
edited >--
>How can we stop stuff like this? I know it is probably not illegal but it
>should be.
>*******************************************************************************
>Larry Heiss
>University of Arkansas @ Little Rock
>Laser Applications Lab
>e-mail heiss@ualr.edu
>KC5CVL
>************************************
Some of this type of activities has been filtered at our sight!
Maybe the access for this person could be shut off!

73, de EDward Spike spike@eestaff.watstar.uwaterloo.ca
*
* AMATEUR RADIO: ve3tck@at.ve3uow.ampr.org
* or VE3TCK@VE3UOW.#SWON.ON.CA.NA
*- - - -/ IEEE Robotic Olympics and MicroMouse Competition Committee
* micro-mouse@ieee.org or mouse@sunee.uwaterloo.ca
* E & CE Dept. University of Waterloo, Waterloo, Ontario,
* Canada, N2L3G1. (519)888-4567, X-3716, fax:(519)888-6197
================================================================================
```

1286. Re: TV Xtal? filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 15:13:02 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s52lu$cq9@ohlone.kn.PacBell.COM>
Source record: 117573

Dirk-Jan Agterkamp (I89) (agterkam@fwi.uva.nl) wrote:
: Can someone tell me more about 38.9 MHz TV-IF XTAL filters.

: I presume these are XTAL filters ?

: OFW 361 (Siemens)
: SW 170 (PLessey)

: What are there specs ? Fo, BW, etc.

: Chears, Dirk.

They are probably SAW or surface acoustic wave filters. Just especially
for TV IF circuits. Probably wide bandwidth, too. You should contact
the makers for product information.

--
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@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@

1287. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 15:23:32 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2s539k$cq9@ohlone.kn.PacBell.COM>
Source record: 117575

John Ackermann (jra@lawdept.daytonOH.ncr.com) wrote:
: Does anyone know of an inexpensive A/D that outputs a serial data stream? If
: that's not available, what would be the simplest microcontroller board that
: could do this?

: I have a piece of test equipment with a chart recorder output (0 to 1 ma).
: I'd like to sample once per second and store the data in an ascii file on a
: computer. I have plenty of spare serial ports, but no slots available to add
: a pc bus D/A board.

: Thanks...

: John Ackermann AG9V
: jra@lawdept.daytonOH.ncr.com

Another way to get it into your PC is through the game port (what? you don't have one??). The 15 pin port on the multi I/O cards.

THe joystick has a resistor that's something like 150K total, and is about half that when the joystick is in the middle. All you have to do is get a CdS photocell and put it in place of the joystick resistor.

THere is a command in BASIC to read the joystick, and at the speed you're looking for, it doesn't seem to be a problem. One sample per second or so seems really easy to keep up with.

The 0-1mA from the chart recorder could go into a single transistor which then drives an LED which is glued to the photocell. Of course, you should use black silicon glue to keep out ambient light. The chart recorder might drive the LED bright enough without any amplifier.

Best of success.
--
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@ Voice (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@@

1288. Re: Is there a cheap A/D package with serial ASCII output?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 16:43:31 UTC
From: cmoore@ilx018.intel.com
Message-ID: <2s57vj$chv@chnews.intel.com>
Source record: 117569

John Ackermann (jra@lawdept.daytonOH.ncr.com) wrote:

: I'd like to sample once per second and store the data in an ascii file on a
: computer. I have plenty of spare serial ports, but no slots available to
: add a pc bus D/A board. John Ackermann AG9V

Hi John, for such a simple application as this, I would use a printer port,
an external D/A and comparator. Drive an 8-bit D/A (Plessey ZN426) from
the printer port, use an LM339 to compare the D/A output to your voltage
(your current through a precision resistor) and read the LM339 output with
an input bit on your printer port. You now have a successive approximation
A/D converter. For one sample per second, you probably can't beat it. A
BASIC program can easily perform the software function.

Or you could use an Intel 80C196KB to do the A/D conversion and send it to
an RS232 port on your PC. (I'm in the 'C196 group)

73, KG7BK, CecilMoore@delphi.com (I do not speak for Intel)

1289. CB 23 ---> 40 channel conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 19:52:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <CqH5u2.HEH@newsflash.concordia.ca>
Source record: 117581

I have a Citizen 23 channel CB. It is crystal
synthesized frequency control and has the following
crystals:
23.290, 23.340, 23.390, 23.440, 23.490,
Message-ID: <27MAY199414523400@vax2.concordia.ca>
Organization: Concordia University
News-Software: VAX/VMS VNEWS 1.41

11.275, 11.730 MHz.
I have the schematics for the CB. Is there someone
out there who could tell me how to add channels to this
unit so it could pick up all 40 channels. I could
fax the schematic to you if you can help me.

Thanks in advance. Please respond either here or by
e-mail at: HIRSCHJ@vax2.concordia.ca.
Keywords:

1290. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-27 21:52:44 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994May27.155244.1@ccsvax.sfasu.edu>
Source record: 117576
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <2s0bnm$ee3@cismsun.univ-lyon1.fr>, elendir@enst.fr (Elendir) writes:
> Hello !
>
> I'm (still) planning to build a multimode multibander (VHF/UHF) rig.
> In the course of designing the SSB part, I am of course facing the
> problem of filtering the unwanted LSB.
> I've talked on the air with several hams that seem pretty positive that
> it is no more possible to find SSB Xtal filters in France.
> Does someone have any clue regarding a possible US source for these ?
> What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
> 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
> fit also.
>
> Thanks !
> Vince, Fox 1 Romeo Charly Sierra

Have you considered a phasing sideband generator?

Jim K5YUT

1291. Re: Need help on inductor winding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-28 14:17:11 UTC
From: zlau@arrl.org
Message-ID: <1994May28.141711.4802@arrl.org>
Source record: 117579

John Lundgren (Santa Ana CA) (jlundgre@news.kn.PacBell.COM) wrote:
: : secondary? Thanks, and if anyone has info on winding inductors (esp.
: : the oddball subminiature inductor for the 7MHz Optimized Transceiver),
: : I would appreciate a lead on where to find it.

: Remember that some of the projects have been purposely made with
: components that are hard to come up with except by buying them from the
: project author. Some authors sell just a circuit board, and also the
: hard-to-get parts. After all, they want to make money, even without too
: many scruples. THey figure the buyer will be back for the hard to
: get/make parts.

Though this is a rather poor example, since Roy sold neither. In fact,
he specifically stated that this project was for ideas, and that people
shouldn't try to duplicate it exactly because he used parts that were
hard to get.... Personally, I'd like to see more articles with great
ideas, even if they are unusable to the kit builders. But, I probably
fall into the minority on this issue...

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1292. Heathkit Model HW-7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-28 16:42:07 UTC
From: Stephen@stevef.demon.co.uk
Message-ID: <770143327snz@stevef.demon.co.uk>
Source record: 117583

I recently sat the UK Radio Amateurs Exam and have bought a Heathkit HW-7 to get on the air with. Unfortunately it came without manuals.

Also I have heard that there is a publication called
the "Hot Water" book with details of modifications ect.

Can anyone out there help me with these, or any other details of the HW-7?

--
Steve Farthing | stephen@stevef.demon.co.uk |
Meklsham "Life can only be understood backwards; but it must be lived
Wiltshire UK forwards" Soren Kierkegaard 1813-1855

1293. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-28 22:39:40 UTC
From: williams@maui.qualcomm.com
Message-ID: <williams.770164780@maui>
Source record: 117580
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

>> Does someone have any clue regarding a possible US source for these ?
>> What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
>> 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
>> fit also.

9 MHz crystal filters "for the experimenter" are available from:

International Radio and Computer, Inc.
3804 South U.S. #1
Fort Pierce, FL 34982

Phone (407) 489-0956, Fax (407) 464-6386.

They cost $75 each. Five models for SSB range from 1800 Hz to 2400
Hz, with shape factors of 1.6 or 1.8. They also have models for CW,
AM, and FM. This company also makes filters designed for Icom,
Kenwood, Yaesu, Heath, Drake, and Collins radios.

I have no affiliation with them, I just happen to have their latest
catalog handy since I was looking into accessory filters for my rig.

73 -Paul
kb5mu@amsat.org

1294. Re: Need help on inductor winding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-29 02:11:00 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2s8tjk$3sk@hobbes.cc.uga.edu>
Source record: 117578

In article <1994May28.141711.4802@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>
>: Remember that some of the projects have been purposely made with
>: components that are hard to come up with except by buying them from the
>: project author. Some authors sell just a circuit board, and also the
>: hard-to-get parts. [...]

>Though this is a rather poor example, since Roy sold neither. In fact,
>he specifically stated that this project was for ideas, and that people
>shouldn't try to duplicate it exactly because he used parts that were
>hard to get.... Personally, I'd like to see more articles with great
>ideas, even if they are unusable to the kit builders. But, I probably
>fall into the minority on this issue...

Hear, hear! "I am not Heathkit" is my motto when I write projects for
Popular Electronics or the like; I use easy-to-get parts even if it cramps
my style.

What I particularly dislike are microcontroller projects with no listings
or exact specification of the software published. Practically universal
practice seems to be to treat the programmed microcontroller as a "black
box" available (of course) only from the author. This makes the project
article nearly useless to people who aren't actually building it.

I don't think I've *ever* built a published project exactly as specified.
I read them to get ideas. To me, withholding the software is as bad as
withholding the schematic would be.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Programs >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1295. Re: Need help on inductor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-29 16:31:03 UTC
From: matt.mccullar@pubcon.com
Message-ID: <940529222543306@pubcon.com>
Source record: 117586

I was always bummed out on electronic projects listed in magazines whenever they called for some esoteric part that you couldn't get locally.
The move these days is to publish a standard-type microcontroller circuit, and then charge folks out the kazoo for the software listing. Either that, or get it for free by contacting the author or magazine. Well, that's just great -- but what happens if the author dies, or if the editorial offices burn down? _Radio-Electronics_ magazine had a very useful BBS that they posted all the software for projects onto, but they refused to keep it running and is now defunct. Go figure.

Matt J. McCullar, KJ5BA

1296. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 06:14:16 UTC
From: norman@pagesat.com
Message-ID: <norman.770278456@pagesat.net>
Source record: 117585
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

williams@maui.qualcomm.com (Paul Williamson) writes:

>>> Does someone have any clue regarding a possible US source for these ?
>>> What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
>>> 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
>>> fit also.

I think we have some 8 pole crystal filters in the 10.7 Mhz range. They
probably are 7.5Khz wide. We have the exact specs. We would probably sell
them to hams for $10.00 each.

If interested please send me your fax number and I will fax the information.

I know 4khz filters at 10.7 Mhz were used in some Uniden SSB CB rigs.
They were quite good. You could put two in series. I think spare parts prices
were in the $25.00 dollar range.

Norman Gillaspie
--
For information regarding Pagesat's Satellite delivered usenet news
mail info request to "info@pagesat.net" or call: 415-424-0384
.. Delivering 100+ megabytes of Usenet news each day via satellite
====================Now for Windows==18" Antenna =======

1297. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 07:46:18 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <2sc5ka$1b0@proffa.cc.tut.fi>
Source record: 117587
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Elendir (elendir@enst.fr) wrote:

> What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
> 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
> fit also.

It is hard to find asymmetric USB (and LSB) filters these days.
In a few years old design for 9 MHz IF, KVG XFM-9B01 and XFM-9B02
were used. I am not sure which one is LSB and which one is USB as
contradictory information was given in the article.

If you settle for a single symmetrical SSB filter, then different
BFO-frequencies for USB and LSB are needed, but the number of suitable
filters is much larger. One source for 10.7 MHz filters in England is
Cirkit (tel. +44-992-441306).

If you think about a single conversion design, 9 or 10.7 MHz IF is quite
low, usable at 144-146 MHz, but if you are going to use it on 70 cm,
you should put separate helical front end filters for the 432 MHz DX-
band and the 435-438 MHz satellite band.

Paul OH3LWR

Phone : +358-31-213 3657
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI
Internet: Paul.Keinanen@Telebox.Mailnet.fi
Telex : 58-100 1825 (ATTN: Keinanen Paul)
Mail : Hameenpuisto 42 A 26
FIN-33200 TAMPERE
FINLAND

1298. need homebrew "recipes"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 08:27:30 UTC
From: john.jewkes@tcfarm.com
Message-ID: <9405300400161582@tcfarm.com>
Source record: 117588

howdy from out in Oregon!!
I need to find some easy-building 2m, 6m, 70cm, 10m, etc.
projects! I don't have the funds necessary to spend big for fancy new
equipment, and recently, I had my one nice mobile radio stolen!! please,
help if you can by sending info on where / how to find schematics/
circuit designs on how to build this equip.

73 DE KB7WTD, John in Gresham, Oregon
(listed in the call book!!!

1299. Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 17:20:07 UTC
From: ferraro14@aol.com
Message-ID: <2sd787$mgn@search01.news.aol.com>
Source record: 117589

Is anybody expirimenting with the techno whizzy dds or any other DDS.
Has any body read the two tech articles in QST by Rohde on receivers
?

73's de Mike K6ZSR

1300. Cheap 6M FM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 18:02:55 UTC
From: tew+@cs.cmu.edu
Message-ID: <CqMnGv.Bnn.2@cs.cmu.edu>
Source record: 117590

Radio Shack sells OEM'ed Maxon 49MHz FM 5 channel (15 kHz spacing)
walkie-talkies for around $50. Has anyone successfully retuned one
of these to work 6 meter duplex (either 500KHz or 1MHz split)?

-Tom, KA8HML
tew+@cs.cmu.edu

1301. Update on Hi-Pwr Solid-State Linear

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 18:24:27 UTC
From: gene@eagle.csl.uiuc.edu
Message-ID: <gene.770322267@eagle.csl.uiuc.edu>
Source record: 117591

[MosFet-Linear1
About a month ago, I posted my experience building a high-power solid-state linear using eight $1.50 MosFets, and very simple circuitry. I'm happy to report that it is working fine and exceeds my expectations, especially on 160 meters, where I can measure 600v P-P across the 50-ohm antenna output connector. This is 900 watts PEP....with the power supply delivering about 5 amps @ 160v. The actual peak currents would be 1.41 x greater for peak amperes of 7amps, for peak dc input of 1120 watts, for an instantaneous efficiency of 80% at the peak.
However, as usual there are always things to be changed or added:
I added a more-or-lesss conventional SWR bridge detector just prior to the 50-ohm antenna coaxial output connector....i.e. passed the ungrounded side of the output link which was passed through the hollow 1/4" copper tubing used as the resonant output coil. When the SWR reaches 2 or 3, the bridge-circuit generates currents exceeding 1 ma which is then passed thru the base-emitter junction of an NPN transistor, which conducts and shorts out the forward-bias line (common to all eight MosFets)...reducing RF output to a safe level. A 0-1ma meter in this SWR bridge output provides the usual viewing of SWR. I did not bother to include the Forward power option, altho that would be easy enough if desired.
Also, I was not too happy with the previous method of limiting In-Rush currents to the 10,000 uf filters, during power-up. As I mentioned, I like to turn my linear off-and-on frequently. As a matter-of-fact, my relay (which had been made more sensitive to facilitate time-delay) proved to be marginal.. and the contacts would stick closed ocassionally...and if not noticed, gives big trouble because of MASSIVE in-rush current....i.e. the zero-charge 10,000 uf capacitors look like a dead-short at the first instant! As a minimum, this will ruin a conventional heavy-duty toggle switch..usually welding the contacts closed, which becomes a safety problem, because you may assume you have switched it off, when in fact it remains ON! And although silicon rectifiers are amazingly tough, it will eventually get one of them. So.....
I have now changed the power-up circuit to a SOFT-power-up that I like very much. It may sound a little complicated to describe, but in reality is very simple to install: At a recent Hamfest I got a few used IRF-150 power M0sFets (100v, 40A, 0.055ohm) for almost nothing...although Newark sells them for about $3.50. To describe the circuit:
1. Begin with two 10w 50ohm resistors in series to limit the In-rush to the 10,000uf.
2. Allow 4 or 5 seconds to let this (100ohms) precharge the filters up to perhaps 80 to 100 volts.
3. Connect a MosFet across each of the individual 50-ohm resistors...Drain most positive-end, Source the other end....but leave both MosFets non-conducting for the first 4 or 5 seconds.
4. After about 4 seconds, one of the Mosfets will begin to conduct, and

and soon become a 0.055 ohm short.
5. After about 6 seconds, the second MosFet begins to conduct and soon becomes a 0.055 ohm short, thus shorting out the second 10-ohm resistor. So power-supply has come from 0 to full voltage in about 7 seconds, and has enjoyed a VERY SOFT turn-on. The main power DPST toggle switch only switches less than 2 amps max....i.e 1.41x120/100 into an instantaneous dead short.
6. To get the MosFets to do these nice things, we need two floating 9 or10 volt supplies, and to make it idiot-proof you should also use a DPDT relay. I could have used two junk-box miniature 12.6 ct transformers to create these two floating supplies, but I chose to use two DuraCell 9v batteries which apparently have a shelf-life of 5 years (At least the package said, install before 1999). The Mosfets have no conduction at zero gate-source voltage, but become a 0.055 ohm short with 9 or 10 v positive on the gate. I put a 1K resistor at the gate, which then goes to the "common" of as SPDT contact-set; The NC contact goes to the source, which assures that the gate is discharged to zero. Also the NEG of the 9v battery connects to the Source. The POS of the battery goes through a 5 megohm resistor on this particular MosFet (it will be 10 megohm on the other), to the NO contact of the SPDT contact-set. My relay is a 120v AC which gets energized immediately at power-up. The second MosFet is wired the same, except that its Time-Constant is twice as long, before it charges up to 9v and turns on the MosFet. Notice that the battery has no load current except a few microamps for a few seconds during power up. THE REASON that it is important to use a relay, is to insure that the 9v charge on the MosFet gates gets discharged immediately...otherwise it holds some charge for quite a long time (as I found out the hard way), so that if you power back up shortly after turn-off, they may still be in a highly conductive state, and additionally, one must assure that the 100v rating is not even momentarily exceeded. Note that at turn-on, there is an instantaneous 170v (120 x 1.41) imposed across the two 50 ohm resistors.. i.e. into an initial dead-short. This would exceed the 100v rating, except that the two equal resistors ensures that this is shared equally at 85v each (this is why it is important that both MosFets be non-conding at turn on and until the pre-charging has reached 70 or 80 volts so that the remaing voltage difference will not exceed 100v when either MosFet begins to conduct.
7. Note that the MosFets only dissipate a small amount of power for a short period before they "short themselves out"....so no heat-sinks are required. As a matter of fact, I mounted them by literally soldering the Source-pin directly on the NC contact terminal on the relay which is quite sturdy. (I do a lot of "air-wiring" on my experiments). Also, the 9v DuraCell terminals take solder nicely, so no need for special connectors. Remember however, that the batteries are floating at the 170v level, so the cases should have adequate insulation, and also should not touch each other.

The Ham Radio hobby, for me, is more experimenting than it is operating, and consequently I have already purchased sixteen IRF-710 MosFets @

$1.49 (IR)..from Newark (Mot are $1.12)...these should be a little faster and may work better on 80 meters, and possibly 40 meters with minimal complication. One Data manual suggests that the most important rule-of-thumb for faster switching, is the Gm/Rev-Cap (Gfs/Crss) ratio. The IRF-710 is considerably better than the IRF-722's that I am using now. I plan to use eight in parallel for each half of the push-pull...total of 16. I will increase the source resistor from 2-ohm, to 3.3-ohm.

Note that the present design (at least on 160 meters) is approaching the ideal limit for the simple 1:1 resonant tank-circuit in the output, i.e. each drain is quiescently at 160 volts, and can only swing between 320 and zero (more practically, 310 and 10 for a p-p value of 300v. Because of the push-pull resonant tank-coil, and the auto-transformer effect, this results in 600v p-p across the total coil and thus across the 50-ohm ouput link to the antenna and this is what I measure with an oscilloscope...i.e 900w.

Thus, getting higher voltage across the coil, will require the drains being tapped down a little from the coil-ends..perhaps 10 or 20% from each end... representing perhaps a drain-to drain impedance of 30 to 40 ohms, and so paralleling more MosFets will meet this requirement.

Practically speaking however, note that the present 900w available is only down about 2.8 db from the legal maximum of 1500w, so it would hardly be worthwhile...except that 16 MosFets would be virtually loafing. A bigger advantage would be realized on 80 meters, and probably 40 meters.

--

Internet, BITNET: gene@csl.uiuc.edu

1302. need homebrew "recipes"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-30 20:18:20 UTC
From: matt.mccullar@pubcon.com
Message-ID: <940531012744313@pubcon.com>
Source record: 117604

John, I've seen some good-looking projects (kits) for 2 meters and some other bands by, of all people, JDR Microdevices in San Jose (1-800-538-5000). Looking through their catalog, they've got QRP transmitter and receiver kits for 20, 40, and 80 meters; CMOS keyer kit; packet radio kit; TV transmitter kit; 2-meter transceiver kit; 2-meter power amp kit. And on and on. Their BBS number is (408) 494-1430.

Good luck!
Matt J. McCullar, KJ5BA

1303. WANTED:reflector

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 01:23:25 UTC
From: Steve Kittelsen <sak1@delphi.com>
Message-ID: <Jy9NGdd.sak1@delphi.com>
Source record: 117592

I'm looking for a 3 foot dish, only the dish without a mount and tripod. It has to have good shape because it's for Ku band. And I'm looking at spending no more than $50 for the reflector. Please let me know of a supplier or if someone has a reflector for sale.


```
**********************************************************************
* STEVE KITTELSEN ________ *
* _ /\ /\ ROCHESTER, N.Y. \ / *
* / /\ \/ \ / *
* I I I I SAK1@DELPHI.COM \ / *
* \ _\/_ / +Open Your Mind+ \/ *
**********************************************************************
```

1304. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 02:18:26 UTC
From: patrick@indirect.com
Message-ID: <2se6pi$kfg@herald.indirect.com>
Source record: 117594

Ferraro14 (ferraro14@aol.com) wrote:
: Is anybody expirimenting with the techno whizzy dds or any other DDS.

I'm building a PC-based DDS around the Qualcomm DDS - when I get the time
to work on it :(Board is designed and half wired.

Pat

1305. Re: Update on Hi-Pwr Solid-State Linear

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 04:00:57 UTC
From: raym@omnifest.uwm.edu
Message-ID: <2secpp$ncl@omnifest.uwm.edu>
Source record: 117596

Read your interesting update and you have piqued my interest. Have been building tube linears for many years, 811A,813,572B,4-400A,etc. I have been following the development of the solid state linear but have not seen anything in the realm as inexpensive as your design. I would be interested in finding out more.(I just got on internet and missed your original posting) Any imformation would be greatly appreciated.
Ray WB9ZIQ
Reply: raym@omnifest.uwm.edu

###

1306. Wanted : quartz oscillators source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 05:30:24 UTC
From: goldberp@iia.org
Message-ID: <2sei1g$2u5@ankh.iia.org>
Source record: 117593

I'd like to order quartz oscillator of given freq.
PLEASE anyone who knows phone of mail order on radio components or other source, let me know by mail (goldberp@iia.org)! Thankful in advance.
Peter

1307. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 09:36:27 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <Cqnuor.I5r@hpqmoea.sqf.hp.com>
Source record: 117599

Ferraro14 (ferraro14@aol.com) wrote:
: Is anybody expirimenting with the techno whizzy dds or any other DDS.
: Has any body read the two tech articles in QST by Rohde on receivers

No, yes, both.

But seriously... Have you seen the data on the various Qualcomm devices, and those from Analog Devices ? The AD7008 seems to be THE device now. I've got one running on its demo board.

Ulrich Rohde's articles are very important, but I wonder whether they will be fully appreciated. He is exactly right about the very poor distribution of gain in the usual Japanese transceivers, and the effect it has on receiver performance. As the bands become more crowded and the adjacent broadcasters buy still more watts, this will become even more important. The existing radios seem to have their gain profile planned to minimise the need for internal screening above all other considerations.

He suggests a low frequency DDS with a PLL frequency multiplier following it. This has some good points, and some bad ones. A DDS alone, like the Technowhizzy, can work nicely as a transmitter but runs into problems in a receiver. DDS quantising noise terms will be 60-70dB down on the output signal, and will be present at various frequencies over (and a little beyond due to limitations on practical filters) the full tuning range of the DDS. The exact frequencies of these quantising components will move around as you tune the DDS. Putting a PLL between the DDS and the receiver structure, either in a multiplicatice role as Rohde suggests, or in an additive structure as done in current production radios will impose a tracking filter effect on the LO, which will remove quantisation components that are outside the loop bandwidth (usually kHz to at most tens of kilohertz)
The worst case is if we tune the DDS to a frequency where its output is close to a quantisation component - close enough to pass the PLL. The true input to the PLL is the vector sum of the DDS wanted output AND the quantisation component. The difference in their frequencies and the amplitude limiting effect of the PSD in the PLL will let this be treated as a phase-modulation sideband. The PLL will pass this phase modulation. In an additive system, the component is passed to the receiver LO signal at its same strength relative to the wanted signal. In a multiplicative system, the PLL multiplier will multiply the phase modulation, giving an unwanted output 20 log (N) dB higher than before (N is the freq multiplication factor for the PLL)
This does not rule out such systems, but it does point out that DDS quantisation is more critical, and some art is needed in the choice of

frequency ranges to try to avoid the very worst cases, if possible.

Rohde is right, the system he suggests is simple and elegant. For an upconverting radio, the LO needs to cover less than an octave, so a fixed ratio PLL is OK, which allows better loop design as the effects of variable N need not be allowed for. With the current progress of creating better and better high speed DACs, I think it may be the way to go. If a new DAC offers better resolution and glitch energy, the quantisation components will be reduced. If a new DAC offers faster speed for the same quantisation component levels, then the PLL can be designed with lower N, and so reducing the multiplication factor, thus making a cleaner LO.

The thing to beware of is that these systems look fine at some frequencies, and only produce problems at a few regions.

Cheers
David GM4ZNX

1308. Re: Drake MN2000 to 160 meters-- Anyone done it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 10:56:09 UTC
From: YVES ALBERT <yves1@delphi.com>
Message-ID: <R2wtW-Z.yves1@delphi.com>
Source record: 117598

Alan, I think you're right. Always interesting to see though if anyone has ever done this... already working on external box! Tnx 73 Al W1EOX

1309. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 12:15:08 UTC
From: elendir@enst.fr
Message-ID: <2sf9oc$jjk@cismsun.univ-lyon1.fr>
Source record: 117595
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello everybody !

Thanks for your helping answers. I finally got a filter (in France) - 10.7 MHz with 2.2 kHz bandwith. It went with the lateral Xtals (10.6985 MHz in my case). But I have taken note of the different addresses you gave me.

The choice of the 10.7 MHz IF is not innocent. I am aware that one of the problem when using packet radio is PLL locking time between RX and TX. It takes about 200 ms, if your step is really small. By using a 10.7 MHz IF for both TX and RX, I completly eliminate this problem, since the PLL remains on the same frequency. I can also use a very cheap ceramic filter to filter the FM.
I know little about helicoidal filters, so I d be pretty interested in knowing more. Also, I d like to know what frequency swing you can expect from a Xtal oscillator modulated by a varicap diode.

Many thanks again ! And 73 from F1RCS, Vince, QTH : Paris.

Oh BTW,

: Have you considered a phasing sideband generator?

Yes. BF shifter is a bit complex. Unless using a FIR to implement the Hilbert filter.

1310. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 15:40:25 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <CqoBJE.K96@hpqmoea.sqf.hp.com>
Source record: 117600
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Elendir (elendir@enst.fr) wrote:

: I know little about helicoidal filters, so I d be pretty interested in knowing
: more.

Connaisez-vous "Handbook of filter synthesis" par Anatol I Zverev,
John Wiley and sons inc New York 1967 ISBN 0 471 98680 1 ?
chapitre 9 "Helical filters" . c'est le tome definitif pour le dessein
mathematique des filtres.

Also, I d like to know what frequency swing you can expect from a Xtal
: oscillator modulated by a varicap diode.

(sorry, my French isn't adequate for this part..)

It depends a lot on the frequency, the circuit, and production
tolerences. With care a 200 ppm (parts per million) tuning range can be
reasonably reliably achieved for a favourable frequency and circuit.

beware that overtone crystals are far far harder to pull. In general
terms, if you have two crystals at the same frequency, the overtone one
will give a swing reduced by a factor roughly equal to the square of its
overtone number.

Example:

A 25 MHz fundamental crystal in an oscillator circuit with a swing
of 100 ppm. replace the crystal with one with its third overtone at 25
MHz, and you'll get about 100/(3^2) = 11 ppm swing ! (very roughly!)

If the tuning range is important, use a funamental crystal at a
suitable frequency, and use frequency multipliers.

Beware of attempts to pull an oscillator too far, you'll suffer from
temperature dependant failure to start, etc etc.

Bon chance

David GM4ZNX

1311. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 15:56:28 UTC
From: jeffj@crl.com
Message-ID: <2sfmnc$1pd@crl2.crl.com>
Source record: 117597

In article <2se6pi$kfg@herald.indirect.com> patrick@indirect.com (Patrick Berry) writes:
>Ferraro14 (ferraro14@aol.com) wrote:
>: Is anybody expirimenting with the techno whizzy dds or any other DDS.
>
>I'm building a PC-based DDS around the Qualcomm DDS - when I get the time
>to work on it :(Board is designed and half wired.
>
>Pat
>

I really hope that you don't keep this all to yourself! 8-) I have wanted to
do one of those for quite a while. What has your costs been so far? How much
is the Qualcomm DDS and where did you get it? Thanks for any info you can
give me!

Jeff
AB6MB

1312. Re: need homebrew "recipes"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-05-31 21:55:38 UTC
From: rapw20@email.sps.mot.com
Message-ID: <1994May31.215538.24895@newsgate.sps.mot.com>
Source record: 117607

In article <940531012744313@pubcon.com> matt.mccullar@pubcon.com (Matt Mccullar) writes:
> John, I've seen some good-looking projects (kits) for 2 meters and some
> other bands by, of all people, JDR Microdevices in San Jose
> (1-800-538-5000). Looking through their catalog, they've got QRP
> transmitter and receiver kits for 20, 40, and 80 meters; CMOS keyer
> kit; packet radio kit; TV transmitter kit; 2-meter transceiver kit;
> 2-meter power amp kit. And on and on. Their BBS number is (408)
> 494-1430.
>
I believe those are actually the Ramsey kits. Apparently they are now being sold by JDR as well as directly from Ramsey.

Mark AA7TA

1313. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 05:53:09 UTC
From: patrick@indirect.com
Message-ID: <2sh7o5$f3l@herald.indirect.com>
Source record: 117601

Jeff Jones (jeffj@crl.com) wrote:
: I really hope that you don't keep this all to yourself! 8-) I have wanted to
: do one of those for quite a while. What has your costs been so far? How much
: is the Qualcomm DDS and where did you get it? Thanks for any info you can
: give me!

I got the Qualcomm Q2334 dual dds from Cain Technology, (602) 966-4322
FAX (602) 968-5132. It comes in 3 speeds - 20 ksps $69 in onesies -
30 ksps for $79 and 50 ksps for $209.

I am using two TRW TDC1012 12 bit 20 msps DACs for the two outputs.
(Can we spell quadrature spread spectrum? :>) I can not remember what I
paid for them but they were not real cheap. Invest in a PC proto board, if
that is the route you want to build around, that has the interface
electronics built into the board. It sure simplifies life. They run about
$70 for a 16 bit board.

My crystal is an Anderson Electronics model 601 20 MHz. Their number is
(814) 695-4428.

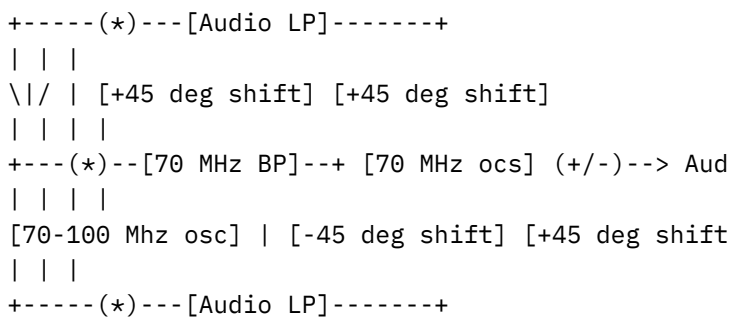
Hope you find the parts you need! The Qualcomm literature has most of the
info you need for building a spread spectrum setup.

Pat

1314. simple SSB receiving methods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 11:25:53 UTC
From: agterkam@fwi.uva.nl
Message-ID: <2shr81$br8@mail.fwi.uva.nl>
Source record: 117602

Currently I'm planning to build a receiver, who doesn't.
However, my intension is NOT to use Xtal filters and NOT
to use a large number of OPAMPS to create sharp lowpass
filters. My plan is to use a phasing method instead.
The basic setup is as follows:



The 70 MHz BandPass and Audio Lowpass filters will be of a
(passive) LC type (width bandwidth). My problem then is:

The audio phase shifters of +- 45 degree do have to be precise
and do have to have a bandwidth of 20 kHz or more.
At the moment this seems to be difficult without OPAMPS or a large
number of resistors and capacitors.

Can anyone give me some advice on how to solve the phase shift
problem. Does a simple and inexpensive method exist to phase
shift a wide spectrum of, lets say, 100 kHz by 45 degrees ?

Thanks in advance, Dirk. e-mail: agterkam@fwi.uva.nl

1315. Getting a VFO on-frequency (W1FB Design NB p. 111)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 12:09:34 UTC
From: sct@po.cwru.edu
Message-ID: <2shtpu$h0m@usenet.INS.CWRU.Edu>
Source record: 117603

I'm working on the DC receiver on page 111 of _W1FB's Design Notebook_
as a first homebrew project. It sure has been educational... :-)
The current problem is that the VFO insists on operating around 5.5 MHz.
I need it up around 7 MHz if this is going to be a 40m receiver. It's
a JFET Hartley VFO with a 4.8 uH inductor tapped 1/4 of the way up for
feedback, 100-125 pF of tank capacitance, and a 100 pF capacitor coupling
the top of the tank circuit to the JFET gate. I'm using an MPF102 for
the JFET. The circuit is built dead bug style.

The values shown for the oscillator work out to 6.5 MHz to 7.25 MHz if I
ignore the 100 pF gate capacitor. How much is that capacitor going to
pull the frequency?

Does the design look sound, in general? I double-checked my wiring
and component values several times. Any other suggestions for things I
should check?

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1316. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 14:49:47 UTC
From: novatech@eskimo.com
Message-ID: <Cqq3v5.191@eskimo.com>
Source record: 117519

jeffj@crl.com (Jeff Jones) writes:

>In article <2se6pi$kfg@herald.indirect.com> patrick@indirect.com (Patrick Berry) writes:
>>Ferraro14 (ferraro14@aol.com) wrote:
>>: Is anybody expirimenting with the techno whizzy dds or any other DDS.
>>
>>I'm building a PC-based DDS around the Qualcomm DDS - when I get the time
>>to work on it :(Board is designed and half wired.
>>
>>Pat
>>

>I really hope that you don't keep this all to yourself! 8-) I have wanted to
>do one of those for quite a while. What has your costs been so far? How much
>is the Qualcomm DDS and where did you get it? Thanks for any info you can
>give me!

>Jeff
>AB6MB

I sell a couple of kits based upon the Qualcomm chip, including
a PC-based one, so I am a bit biased.

I don't know what the low-quantity price is, but it should be
around $30 or so.

One thing about the 73 kit article: the DAC used is really used outside
its spec range. Most of the parts will work fine, but use a spectrum
analyzer to check your spurs.

I can make available postscript files of my kit schematics for anyone
interested, send me email. The DAC I used is the Motorola MC10322P--
pretty good for the price. My current favorite is the Analog Devices
AD9721, but it's pretty expensive for hobby use. The best
inexpensive one (10-bits) seems to be the Analog Devices AD7128
at the moment.

--

Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303

1317. Re: Techno Whizzy DDS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 18:43:53 UTC
From: wiseman@ATVL.Research.Panasonic.COM
Message-ID: <1994Jun1.184353.11602@MITL.Research.Panasonic.COM>
Source record: 117605

I purchased a Novatech DD3 kit for about $100. This kit is based around a 32 MHz. Qualcomm chip, and is meant as a sort of demo board. I modified the input by placing latches there to create a PC parallel port interface. I use this board in my homebrew 80m transceiver with an IF of 4.9152 MHz. In this application, several spurs are noticable, for the reasons given by one of the previous posters. They are not really objectionable, as they are at the LSB resolution (2 Hz) and can be easily tuned around. My present software is keyboard controlled - I use the up/down keys to give me a large frequency change, and the left/right keys to give me a small change. My preference is 1000 and 100 Hz, respectively, but this is also programmable.

A second set of latches contains the transmit frequency, which is switched on when I depress my key. The software automatically updates this transmit register whenever I change frequency in the receiver so that the correct offset is maintained. As was correctly stated previously, the deficiencies of the DDS as a receiver LO are not noted in my transmitter, due to filtering and the fact that I am using a class C amplifier on the output. My lab's spectrum analyzer shows that all harmonics are at least 45 dB down from the carrier, even with the DDS being used as a "direct drive".

Some noise reduction on the Novatech board will allow better performance. For example, the clock driver design allows a fair amount of 32 MHz to come out the back door (verified with a spectrum analyzer). I modified this circuit and replaced the rather cheap PCB trace with coax to help reduce this. Also, to save money they use an 8-bit DAC, even though the Qualcomm output is 10-bits. I'm in the process of replacing this one as the quantization noise is very high with only 8 bits.

Overall, quite interesting to play with, and certainly more stable than any analog LO that I have built. It also makes a good direct drive CW transmitter source. Future work here will involve a nice, user friendly GUI for the PC...

John
KA5WTO

1318. Re: simple SSB receiving methods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 19:23:11 UTC
From: alanb@sr.hp.com
Message-ID: <CqqGIp.1Cv@srgenprp.sr.hp.com>
Source record: 117606

Dirk-Jan Agterkamp (I89) (agterkam@fwi.uva.nl) wrote:
: Currently I'm planning to build a receiver, ...
: My plan is to use a phasing method instead. ...

: The audio phase shifters of +- 45 degree do have to be precise
: and do have to have a bandwidth of 20 kHz or more.
: At the moment this seems to be difficult without OPAMPS or a large
: number of resistors and capacitors.

: Can anyone give me some advice on how to solve the phase shift
: problem. Does a simple and inexpensive method exist to phase
: shift a wide spectrum of, lets say, 100 kHz by 45 degrees ?

You could use the Weaver ("Third method" of SSB generation).
I believe it is covered in the ARRL Handbook. Briefly, you
replace the audio phase shift networks with a pair of mixers,
fed with 90-degree-out-of-phase oscillators with a frequency
in the middle of the audio passband. When you sum the mixer
outputs, you get USB or LSB, depending on whether it's a
+ or - 90 degree phase relationship. Oh, by the way, the
low-pass audio filters at the mixer inputs have a cut-off
frequency of 1/2 the audio bandwidth (just below the
oscillator freq).

AL N1AL

1319. QRP mailing list?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 19:28:20 UTC
From: Brad=Staff%PC=SW%PCPD=Hou@bangate.compaq.com
Message-ID: <77049530034n12@131.168.114.12>
Source record: 117527

Is the QRP mailing list still around?

73,

Brad
aa8if@bangate.compaq.com

1320. Transmitting Tube Cooling, Summary

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 19:49:57 UTC
From: drs@ccd.harris.com
Message-ID: <1994Jun1.194957.19513@ccd.harris.com>
Source record: 117617

Thanks for the responses on my request for ideas on measuring air flow around a transmitting tube, or otherwise protecting it from too much heat.

1. Several mentioned the manometer, a "U" shaped piece of tubing or glass that contained water. When inserted in the chamber of air flow, the change in water height indicated the pressure.

2. One mentioned that the people at Eimac used to put ribbons on the exhaust of the air system socket and make sure the ribbons blew straight up.....

3. The idea I like the best is the use of temperature sensitive paint on the base of the tube. It was recommended that a few temperature ranges be painted on the base. The tube specs have the max. allowable base seal temp. All I need to do now is find a source.

73's Doug

--

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |

1321. Schematics for Luxor 1909530, Magnum Microwave c24-3

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 21:35:08 UTC
From: jdchess@uclink2.berkeley.edu
Message-ID: <2siuuc$83l@agate.berkeley.edu>
Source record: 117610

I'm looking for some documentation on a Luxor receiver (1909350) and
Magnum Microwave downconverter (c24-3) to assist with repair. I've
already contacted Magnum and found out they've shredded all their
schematics, but if anyone has experience of useful information on
these historical pieces I'd appreciate it.
Thanks in advance,
james ab6yh
/ jdchess@uclink2.berkeley.edu

1322. Phase noise floor of Motorola CMOS PLL dividers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 21:43:40 UTC
From: myers@cypress.West.Sun.COM
Message-ID: <2sivec$lni@abyss.West.Sun.COM>
Source record: 117609

Does anyone have empirical information on the phase noise floor of the dividers in the Motorola CMOS PLL chips, such as the MC145157 and MC145170? I'm tending to guess towards -150dBc, a number I've seen published for CMOS dividers, but is this accurate?

This is of particular interest with respect to the on-chip reference divider in the Motorola CMOS PLLs. I would guess the phase noise level of the reference frequency, when driven with the on-chip oscillator using a crystal, is going to be primarily determined by the divider.

Any comments?

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1323. Re: QRP mailing list?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 22:19:47 UTC
From: pschleck@cwis.unomaha.edu
Message-ID: <pschleck.770509187@cwis>
Source record: 117528

In <77049530034n12@131.168.114.12> Brad=Staff%PC=SW%PCPD=Hou@bangate.compaq.com writes:

>Is the QRP mailing list still around?

>73,

>Brad
>aa8if@bangate.compaq.com

As far as I know it is. Check my Elmers Directory (just posted to
rec.radio.info) for more info.

73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

1324. Re: QRP mailing list?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-01 23:55:37 UTC
From: jeffj@crl.com
Message-ID: <2sj75p$njl@crl.crl.com>
Source record: 117608

>In <77049530034n12@131.168.114.12> Brad=Staff%PC=SW%PCPD=Hou@bangate.compaq.com writes:
>
>>Is the QRP mailing list still around?
>
>>73,
>
>>Brad
>>aa8if@bangate.compaq.com

To subscribe to the QRP mailing list do the following;

email to majordomo@think.com

Subject: You can leave it blank

subscribe qrp or unsubscribe qrp to quit receiving it.

It is automated so you will receive an reply telling you that they got it.
Then shortly there after and sometimes along with it you will receive
the QRP mailing list. There are new messages constantly being sent as it
is very active.

Jeff
--
Jeff Jones AB6MB
jeffj@crl.com

1325. Re: Getting a VFO on-frequency (W1FB Design NB p. 111)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 00:00:39 UTC
From: jeffj@crl.com
Message-ID: <2sj7f7$oas@crl.crl.com>
Source record: 117611

In article <2shtpu$h0m@usenet.INS.CWRU.Edu> sct@po.cwru.edu (Stephen C. Trier) writes:
>The current problem is that the VFO insists on operating around 5.5 MHz.
>I need it up around 7 MHz if this is going to be a 40m receiver. It's
>a JFET Hartley VFO with a 4.8 uH inductor tapped 1/4 of the way up for
>feedback, 100-125 pF of tank capacitance, and a 100 pF capacitor coupling
>the top of the tank circuit to the JFET gate. I'm using an MPF102 for
>the JFET. The circuit is built dead bug style.
>The values shown for the oscillator work out to 6.5 MHz to 7.25 MHz if I
>ignore the 100 pF gate capacitor. How much is that capacitor going to
>pull the frequency?

Have you tried spreading or squeezing the wires together on the inductor?
I think he mentions somewhere in his book that you might have to do that.
Hope this helps!

Jeff

--
Jeff Jones AB6MB
jeffj@crl.com

1326. Re: Getting a VFO on-frequency (W1FB Design NB p. 111)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 11:13:07 UTC
From: jimn0oct@aol.com
Message-ID: <2skes3$fqu@search01.news.aol.com>
Source record: 117612

In article <2sj7f7$oas@crl.crl.com>, jeffj@crl.com (Jeff Jones) writes:

>The current problem is that the VFO insists on operating around 5.5 MHz.
>I need it up around 7 MHz if this is going to be a 40m receiver. It's
>a JFET Hartley VFO with a 4.8 uH inductor tapped 1/4 of the way up for
>feedback, 100-125 pF of tank capacitance, and a 100 pF capacitor coupling
>the top of the tank circuit to the JFET gate. I'm using an MPF102 for
>the JFET. The circuit is built dead bug style.
>The values shown for the oscillator work out to 6.5 MHz to 7.25 MHz if I
>ignore the 100 pF gate capacitor. How much is that capacitor going to
>pull the frequency?

It has been my experience that you'll need to play with either squeezing the inductor windings closer together (or moving them farther apart), or try some different caps to get resonance at the correct freq. You also might try a small trimmer at the gate (rather than the 100 pF) to find a value that doesn't pull the freq, but allows reliable start up. Stray capacitance and inductance is probably the culprit here. This is what experimenting is all about. Don't get frustrated (I did, it doesn't help)--just play with it until it works!

Good Luck

72 (+/- 1) Jim N0OCT

1327. Re: Ham-Homebrew Digest V94 #129

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 11:57:58 UTC
From: elendir@enst.fr
Message-ID: <2skhg6$6r3@cismsun.univ-lyon1.fr>
Source record: 117613

Dan Connolly (dcon@cc.bellcore.com) wrote:
: "Typical" European values for telephone set operating parameters are:

: Subscriber Loop Resistance 0 to 1300 Ohms

600 ohms MANDATORY is France.

: Loop loss 8 dB
: Ringing Signal 16 to 50 Hz, 40 to 130 V rms

: Another thing to think about is dialing. Dual Tone Multi-Frequency (Touch
: Tone) dialing is not very common, even in some of the more advanced
: countries. The pulse dialing in many countries is probably similar to the
: U.S., but don't assume this is true everywhere.

Thanks ;-) We have been using DTMF since 10 years now. All the country has
DTMF capability !!! We are not the third-world of telephony :-)

Vince, F1RCS

1328. unsubscribe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 13:04:39 UTC
From: SLTMW@cc.usu.edu
Message-ID: <01HD23HYXXFCC2IDSA@cc.usu.edu>
Source record: 117614

```
unsubscribe sltmw@cc.usu.edu
```

1329. Re: Getting a VFO on-frequency (W1FB Design NB p. 111)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 13:07:48 UTC
From: sct@po.cwru.edu
Message-ID: <2sklj5$leb@usenet.INS.CWRU.Edu>
Source record: 117615

Thanks for the suggestions. I already fiddled with the winding spacing
and that improved it by about 400-500 KHz. (It's hard to tell exactly,
since I'm using an oscilloscope to measure frequency by comparing the
VFO output to a 7 MHz crystal oscillator.)

The idea of replacing the tank capacitor with a trimmer is a good one.
I'll try pulling a couple windings off the inductor first, I guess.
It looks like I should lose 5, give or take 1.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1330. Re: QRP mailing list?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 15:24:21 UTC
From: vinod@watson.ibm.com
Message-ID: <2sktj5$15ft@watnews1.watson.ibm.com>
Source record: 117536

In article <2sj75p$njl@crl.crl.com>, jeffj@crl.com (Jeff Jones) writes:
|>
|> subscribe qrp or unsubscribe qrp to quit receiving it.
|>

Or you can subscribe to the digest version, which is sent out
once daily, by using:

subscribe qrp-digest

--vinod
vinod@watson.ibm.com

1331. Re: Help needed for external 22AT power

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 16:27:38 UTC
From: heiss@ualr.edu
Message-ID: <1994Jun2.102738.1@eivax.ualr.edu>
Source record: 117616

In article <1994May26.215242.15420@sue.cc.uregina.ca>, mmurray@leroy.cc.uregina.ca (Mike Murray) writes:
> My Kenwood 22AT has only one external power input jack located on
> the side of the radio. Kenwood supplies a 12.5V 70ma adapter to
> use with the unit. The adapter charges the battery but does not
> have enough current to transmit with. I am planning on building
> a simple 12V 3A power supply to used with the radio. My concern is
> that I will be over charging the internal 6Volt 600ma battery.
> Should I be removing the battery when using an external high current
> power supply? Kenwood does not show a external AC power supply as
> an option for this radio, but they do have a car adapter- which
> could cause overcharging of the battery. Kenwood recommends a max
> of 15 hours using the 12.5V 70ma charger.
>
> Any suggestions?
>
> Thanks in Advance.
>
> Mike Murray
> mmurray@leroy.cc.uregina.ca
> VE5EF
--
Hi Mike:
When using an external power supply you must disconnect the batteries
. Whether you actually remove the batteries or install a switch to select
battery or power supply operation is up to you.
The only over-charging side effect I'm sure of is drastically
shortend battery life. I believe that they could also leak or explode.
Good Luck.
****
Larry Heiss: BS, Computer Engineering Technology
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail heiss@ualr.edu
call: KC5CVL
****

1332. what is Techno Whizzy DDS?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 17:02:50 UTC
From: heiss@ualr.edu
Message-ID: <1994Jun2.110251.1@eivax.ualr.edu>
Source record: 117518

I have been following the stream on the Techno Whizzy DDS thinking
Somewhere along the way someone would define DDS and some of the other
nemonics used but no one did :(. I am quite familiar with PC interfacing
and DAQ's (digital acquisition) but have no knowledge of spread spectrum or
the terminology used for spread spectrum. If someone would post a brief
explanation it would make me very happy :).
Thanks in advance.
--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail heiss@ualr.edu
call: KC5CVL
****

1333. Re: Transmitting Tube Cooling, Summary

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 17:55:35 UTC
From: zardoz@ornews.intel.com
Message-ID: <2sl6f8$hd0@ornews.intel.com>
Source record: 117523

In article <1994Jun1.194957.19513@ccd.harris.com> drs@ccd.harris.com (Doug Snowden) writes:
>Thanks for the responses on my request for ideas on measuring air flow around
>a transmitting tube, or otherwise protecting it from too much heat.

>3. The idea I like the best is the use of temperature sensitive paint on the
> base of the tube. It was recommended that a few temperature ranges be
> painted on the base. The tube specs have the max. allowable base seal temp.
> All I need to do now is find a source.

When I used to work with induction heating equipment I found that the steel industry often uses temperature sensitive "crayons" which melt at various specific temperatures. These were for forging and annealing temperatures however, and I'm sure you don't want your transmitting tube bases glowing bright yellow. They may make lower temperature crayons as well. I'll see if I have some at home and determine the manufacturer if you wish.

--
zardoz@ornews.intel.com WA7LDV

1334. QRP mailing list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 18:53:40 UTC
From: moreno@key.amdahl.com
Message-ID: <1994Jun2.185340.20371@ccc.amdahl.com>
Source record: 117529

```
subscribe qrp

Bob
```

1335. Re: what is Techno Whizzy DDS?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 19:12:12 UTC
From: alanb@sr.hp.com
Message-ID: <CqsAoD.xs@srgenprp.sr.hp.com>
Source record: 117520

heiss@ualr.edu (heiss@ualr.edu) wrote:
: I have been following the stream on the Techno Whizzy DDS thinking
: Somewhere along the way someone would define DDS and some of the other
: nemonics used but no one did :(.

Not sure about the "Techno Whizzy" part, but "DDS" stands for
"Direct Digital Synthesis."

A normal phase-locked loop (PLL) synthesizer uses a voltage-controlled
oscillator (VCO) which is phase-locked to a high-stability crystal
oscillator reference. To allow changing frequency, there is a
programmable frequency divider between the VCO and the phase detector,
so that the output frequency can be any integer times the reference
frequency. For example, if the reference is 10 kHz, the VCO frequency
can lock to N times 10 kHz.

A DDS synthesizer, on the other hand, generates the sine wave output
signal directly using a digital-to-analog converter (DAC). The DAC
output changes state at a rate much higher than the highest
sine wave frequency desired. To get different frequencies, the DAC
simply shortens or widens the width of the cycles it is outputting.

The advantages of DDS are very fast frequency switching and finer
frequency resolution. The disadvantages are limited upper frequency
range, complexity, and often poorer spurious performance.

So there's a few mnemonics to get you started, DDS, PLL, VCO, DAC...
:=)

AL N1AL

1336. VCO schematic 430MHz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 21:11:46 UTC
From: anko@chem.rug.nl
Message-ID: <CqsG7M.o15@risc1.rug.nl>
Source record: 117521

Hi netters...

I'm looking for a good (ie. working) schematic for a VCO ranging from approx 430 MHz up till 500 MHz (70 cm amateur band). Maybe someone can post or mail me an example how to do this. The exact specs are not that important, just the idea how to build the thing.

Thanks a lot.

Anko

--
Anko Westers email: anko@chem.rug.nl

1337. Re: Getting a VFO on-frequency (W1FB Design NB p. 111)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-02 23:59:39 UTC
From: drew@trl.oz.au
Message-ID: <drew.133.0@trl.oz.au>
Source record: 117524

In article <2sj7f7$oas@crl.crl.com> jeffj@crl.com (Jeff Jones) writes:
>From: jeffj@crl.com (Jeff Jones)
>Subject: Re: Getting a VFO on-frequency (W1FB Design NB p. 111)
>Date: 1 Jun 1994 17:00:39 -0700
>In article <2shtpu$h0m@usenet.INS.CWRU.Edu> sct@po.cwru.edu (Stephen C. Trier) writes:
>>The current problem is that the VFO insists on operating around 5.5 MHz.
>>I need it up around 7 MHz if this is going to be a 40m receiver. It's
>>a JFET Hartley VFO with a 4.8 uH inductor tapped 1/4 of the way up for
>>feedback, 100-125 pF of tank capacitance, and a 100 pF capacitor coupling
>>the top of the tank circuit to the JFET gate. I'm using an MPF102 for
>>the JFET. The circuit is built dead bug style.
>>The values shown for the oscillator work out to 6.5 MHz to 7.25 MHz if I
>>ignore the 100 pF gate capacitor. How much is that capacitor going to
>>pull the frequency?
>
>Have you tried spreading or squeezing the wires together on the inductor?
>I think he mentions somewhere in his book that you might have to do that.
>Hope this helps!
>
>Jeff
>
>--
>Jeff Jones AB6MB
>jeffj@crl.com
>

Squeezing or stretching the turns only gives a small (but sometimes useful)
variation on frequency. With the values indicated; the oscillator should be
working above 6.5MHz- so something is wrong. Is the coil indeed 4.8uH?
Perhaps it is something more like 8.2uH? The 100pF gate coupling capacitor
seems a little large. At 7MHz a value like 3.9 or 4.7pF is more usual
(lighter loading of the tank). And (this may start an argument) leave out
that useless little diode at the gate- it does no good that I can see, and
sometimes causes a deterioration in output and stability.

A handy formula for tank circuit work (particularly VFO tanks) is:

L = 25330 divided by (FMHz SQD X CpF)

and

C = 25330 divided by (FMHz SQD X LuH).

and by transposing for F:

F = SQ RT of [25330 divided by (LuH X CpF)].

73, Drew, VK3XU. Telecom Australia Research Laboratories.

1338. Re: Repeater linking, what radios?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 00:54:27 UTC
From: Ronnie Bratton <bratton205@delphi.com>
Message-ID: <Ju0s2b7.bratton205@delphi.com>
Source record: 117522

Ok I have put together a system like you want. One way to do this cheap is to use Motorola Micors. Get a Micor pull out the VHF receiver build a 9.6 reg. an an audio interface board add a CW ID and feed this to a Motorola Mocom 10 UHF Tx and buy yourself a dual band Vert. and you have a remote.
At the repeater put up a UHF beam and take a Micor for UHF and build a 9.6 reg. and feed this to the Hall unit and you will have a great system.
I am still working on the audio it is too sharp but in time we will work it out. good luck.

1339. Looking for GE UHF MVP radios (407-420MHz or 450-470MHz)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 01:08:21 UTC
From: phil@hansen.ncd.com
Message-ID: <2slvq5$r8n$1@rosebud.ncd.com>
Source record: 117525

I am looking to put a full-duplex link up between two of my 1.2 GHz repeaters.

Does anyone have a source for GE UHF MVP radios?

The link would be in the 420-430 link band.

I understand that there are two versions of the MVP that might work. One is
for the 407-420 MHz band and the other is 450-470 MHz band. Although the
450/470 version may take more tuning to get it down to 420-430 area.

Anyone have a line on these radios?

Thanks!

Phil
de KJ6NN

P.S. I like the MVP since it is small enough to fit into the tight rack space
that I have at the repeater site

email: phil@ncd.com
packet: kj6nn@n0ary-1
FAX: 408-262-4593

1340. Re: Cheap 6M FM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 02:49:46 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2sm5oa$g5j@abyss.West.Sun.COM>
Source record: 117526

In article 2@cs.cmu.edu, tew+@cs.cmu.edu (Thomas Warfel) writes:
>Radio Shack sells OEM'ed Maxon 49MHz FM 5 channel (15 kHz spacing)
>walkie-talkies for around $50. Has anyone successfully retuned one
>of these to work 6 meter duplex (either 500KHz or 1MHz split)?
>
> -Tom, KA8HML
> tew+@cs.cmu.edu
>

Not likely. This HT, a nicely done piece of work at $40, uses a cordless
phone PLL chip which doesn't appear to lend itself well to 6m operation.

The less expensive xtal controlled HT, however, is easily modified for
6m, so I'm told.

I bought the service manuals for both of them (I own both), and plan to
experiment with them. The T/R switch on them is nothing. The transmitter,
with a specified output power of around 10mW, simply drives the common base
front end along with the antenna. There is a choke in series with the
short antenna, all designed to provide a legal Part 15 field strength.
Doesn't look too hard to boost to higher power levels for amateur use,
but a real T/R switch is required and the spectral purity is suspect.

Maybe I'll just use them as an IF for a transverter project...

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1341. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 03:00:06 UTC
From: mtracy@arrl.org
Message-ID: <rec.radio.info-arrl.email.info_770612404@ve6mgs.ampr.ab.ca>
Source record: 117531
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command in your message.

IMPORTANT: Please use the quit command in your message. This will prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling written requests. Any questions on the info-server or the content of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the reply address is redirected to keep bounced messages from endlessly looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the internet better access to the knowledgeable technical staff here at ARRL HQ. Questions relating to Amateur Radio and related technical topics are welcome. To use this service, send a normal e-mail message to tis@arrl.org with your question spelled out in plain english. For best service, be as specific as possible and keep your line length in messages to a maximum of 80 characters. Due to personnel limitations, priority will be given to questions from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the file prospect (send prospect) for information on how to easily get started in this fun hobby.

FILENAME SIZE DATE DESCRIPTION
--- --- --- ---
PROSPECT.TXT 2k 930514 How to get your Amateur Radio license
EXAMS.TXT 52k 930629 Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k 921020 Examinations - what to bring - requirements
USERS.TXT 6k 930119 List of HQ Email addresses
ARRLCAT.TXT 39k 930709 Catalog of ARRL Publications - commercial content
JOIN.TXT 2k 930621 How become an ARRL member
SERVICES.TXT 5k 930621 A condensed list of ARRL membership services
TOUR.TXT 28k 930621 An electronic tour of ARRL Headquarters
DIR.HQ 5k 930310 Visiting ARRL HQ - diretions and tour information
HFBANDS 7k 921203 Breakdown of users of HF spectrum
Q-SIGS 1k 921203 ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k 930120 W1AW schedule of transmissions and operation
PRODREV1.TXT 12k 930227 Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k 930227 Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k 931120 QST Bibliographies List
RFIGEN.TXT 37k 930120 How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k 930607 Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k 930318 Lots and lots of ham/electonic company addresses
KITS.TXT 6k 930430 List of companies that sell kits
BBS.TXT 12k 930601 List of ham-radio land-line bulletin boards
FAQ1.TXT 25k 930707 Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k 930707 Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k 930707 Amateur Radio Advanced and Technical Questions

---

American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

1342. Re: Cheap 6M FM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 13:34:29 UTC
From: kludge@netcom.com
Message-ID: <kludgeCqtppH.KDq@netcom.com>
Source record: 117530

In article <2sm5oa$g5j@abyss.West.Sun.COM> myers@spot.West.Sun.COM writes:
>In article 2@cs.cmu.edu, tew+@cs.cmu.edu (Thomas Warfel) writes:
>>Radio Shack sells OEM'ed Maxon 49MHz FM 5 channel (15 kHz spacing)
>>walkie-talkies for around $50. Has anyone successfully retuned one
>>of these to work 6 meter duplex (either 500KHz or 1MHz split)?
>
>Not likely. This HT, a nicely done piece of work at $40, uses a cordless
>phone PLL chip which doesn't appear to lend itself well to 6m operation.
>
>The less expensive xtal controlled HT, however, is easily modified for
>6m, so I'm told.

Agreed. I have modified the little xtal controlled beast and it works nicely.
Even got a couple of states with it when 6M was really open. I think the HT
might be modifyable, though, but it's going to take more work.

If you want more power, look into boatanchors. There are a lot of military
field radios that will cover 6M and which can be had for a song. Fair Radio
has a nice assortment, and I picked up a PRC-10 for $20 at a hamfest
myself.
--scott

--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1343. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 16:19:35 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2snl6n$sjh@hpscit.sc.hp.com>
Source record: 117543
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <CqoBJE.K96@hpqmoea.sqf.hp.com>,
David Stockton <dstock@hpqmoca.sqf.hp.com> wrote:
>
> It depends a lot on the frequency, the circuit, and production
>tolerences. With care a 200 ppm (parts per million) tuning range can be
>reasonably reliably achieved for a favourable frequency and circuit.
>
> beware that overtone crystals are far far harder to pull. In general
>terms, if you have two crystals at the same frequency, the overtone one
>will give a swing reduced by a factor roughly equal to the square of its
>overtone number.
>
> Beware of attempts to pull an oscillator too far, you'll suffer from
>temperature dependant failure to start, etc etc.
>
> David GM4ZNX

Actually, with the right circuit, you can reliably pull a fundamental
crystal 1000 PPM (i.e. +/-500 PPM). If necessary you can increase that
to 2000, 3000 or even 4000 PPM with some degradation of phase noise
and temperature stability. Similarly, 3rd overtone crystals can be
reliably pulled 100 PPM and 5th overtone crystals can be reliably pulled
40 PPM.

How do you do this? Build an LC Colpitts oscillator at the frequency
of your crystal (get it within a few %). Now, insert the following
circuit in series with the
emitter of the transistor: the crystal in series with the tuning diode
in series with an inductor which resonates with the diode at the xtal
frequency when in the middle of the diode's tuning range. Finally,
install a shunt inductor directly across the crystal such that it
resonates out the C-zero of the crystal at the crystal frequency.
C-zero is typically 5 pF. Make sure this inductor has a high enough
SRF (i.e. >> xtal frequency). Note that the finished oscillator has
3 inductors.

If you have starting problems, you might have a VHF parasitic oscillation.
The old trick with a ferrite bead on the base or collector will fix this.
A 2N5179 is a good transistor to use.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1344. MUX DISPLAY

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 16:38:07 UTC
From: cspeck@garnet.msen.com
Message-ID: <Pine.3.88.9406031247.A6556-0100000@garnet.msen.com>
Source record: 117532

I am looking for a source for the DL-340M four-segment display used in the frequency counter featured in the latest ARRL Handbook.

Carl Speck cspeck@mail.msen.com

1345. Any suggestions how to test audio tubes?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 16:55:01 UTC
From: beaton@rb.unisys.com
Message-ID: <Cqtyzr.GKt@rb.unisys.com>
Source record: 117541

Any one tried to test audio vac tubes out there?
I heard groove tubes had some kind of device for musicians?
How does one set the bias? I have oscilloscope and sig gen.

1346. Re: Getting a VFO on-frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 17:40:15 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2snptv$ai1@tekadm1.cse.tek.com>
Source record: 117533

From: drew@trl.oz.au (Drew Diamond)

>And (this may start an argument) leave out that useless little diode at the
>gate- it does no good that I can see, and sometimes causes a deterioration
>in output and stability.

Sorry, Drew, you're right -- I've gotta argue with your statement. The diode has a very noticeable and measurable beneficial effect on stablility. Both Wes, W7ZOI, and I have confirmed this. The diode acts as a clamp, never conducting more than very, very slightly. It prevents the FET gate-source diode from conducting, which would load the tank circuit, reducing its Q and increasing drift. In my experiments, a schottky or germanium diode does degrade the stability, for reasons I've never investigated. Perhaps it's because of the larger reverse leakage currents of these types. But a 1N914-type silicon diode does effect a very apparent improvement in stabililty.

Roy Lewallen, W7EL
roy.lewallen@tek.com

1347. Re: Getting a VFO on-frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 18:37:13 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.770668633@aries>
Source record: 117534

royle@tekgp4.cse.tek.com (Roy W Lewallen) writes:

>From: drew@trl.oz.au (Drew Diamond)

>>And (this may start an argument) leave out that useless little diode at the
>>gate- it does no good that I can see, and sometimes causes a deterioration
>>in output and stability.

>Sorry, Drew, you're right -- I've gotta argue with your statement. The diode
>has a very noticeable and measurable beneficial effect on stablility. Both
>Wes, W7ZOI, and I have confirmed this. The diode acts as a clamp, never
>conducting more than very, very slightly. It prevents the FET gate-source
>diode from conducting, which would load the tank circuit, reducing its Q
>and increasing drift. In my experiments, a schottky or germanium diode does
>degrade the stability, for reasons I've never investigated. Perhaps it's
>because of the larger reverse leakage currents of these types. But a
>1N914-type silicon diode does effect a very apparent improvement in
>stabililty.

June '94 QST has an article (part 2) on receiver design which if I read
the thread correctly, concludes that it would be good to leave this diode
out...that it contributes to phase noise. Just wondering if this is
relevant to your discussion.
Chuck Hawley.....KE9UW.....Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

1348. Schematic for WEFAX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 19:21:39 UTC
From: paweiss@ellis.uchicago.edu
Message-ID: <1994Jun3.192139.15561@midway.uchicago.edu>
Source record: 117535

Hi, new here; am I in the right place?

I'm looking for a schematic for a WEFAX decoder, like the ones they sell for ~$75, going from the headphone jack of a shortwave recv. to the serial port of an IBM compatable. I got a bad copy of one in spain, and the communication problems kept much information from being passed (for the longest time, I thought they were giving me the secret diagram, turned out to be a circuit diagram :)), and would like to try again.

Thanks,
--
Philip Weiss paweiss@midway.uchicago.edu

1349. Narrowband Network Analyser

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 20:30:12 UTC
From: russells@iconz.co.nz
Message-ID: <2so3sk$9kn@status.gen.nz>
Source record: 117537

[No readable article body recovered]

1350. Re: Cheap 6M FM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 20:34:51 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2so45b$g5j@abyss.West.Sun.COM>
Source record: 117542

In article KDq@netcom.com, kludge@netcom.com (Scott Dorsey) writes:
>In article <2sm5oa$g5j@abyss.West.Sun.COM> myers@spot.West.Sun.COM writes:
>>In article 2@cs.cmu.edu, tew+@cs.cmu.edu (Thomas Warfel) writes:
>>>Radio Shack sells OEM'ed Maxon 49MHz FM 5 channel (15 kHz spacing)
>>>walkie-talkies for around $50. Has anyone successfully retuned one
>>>of these to work 6 meter duplex (either 500KHz or 1MHz split)?
>>
>>Not likely. This HT, a nicely done piece of work at $40, uses a cordless
>>phone PLL chip which doesn't appear to lend itself well to 6m operation.
>>
>>The less expensive xtal controlled HT, however, is easily modified for
>>6m, so I'm told.
>
>Agreed. I have modified the little xtal controlled beast and it works nicely.
>Even got a couple of states with it when 6M was really open. I think the HT
>might be modifyable, though, but it's going to take more work.
>
>If you want more power, look into boatanchors. There are a lot of military
>field radios that will cover 6M and which can be had for a song. Fair Radio
>has a nice assortment, and I picked up a PRC-10 for $20 at a hamfest
>myself.

I just coordinated a purchase of three very clean Motorola Mitrek mobiles.
$50 each, with accessories. 60W out, better than .2uV sensitivity. I
want to synthesize them, but first we'll get them up with rocks.

:-)

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1351. Best freq for 6M AM simplex?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 22:28:02 UTC
From: John Nordlie <UD167958@NDSUVM1.BITNET>
Message-ID: <94154.172802UD167958@NDSUVM1.BITNET>
Source record: 117538

I'm working on a project with annother ham to convert some radio shack toy walky-talkies (49 MHz) to 6M. Having never worked 6M before (and I don't know anyone in the area that has), I'm having trouble finding out what freq I should use. The HT's are crystal controlled, so I'd like to get the freq right on the first try. What should I use for AM simplex? I'd like to stay far away from the calling freqs, DX, and FM. Anyone have any suggestions?

Thanks in advnace.

John Nordlie N0RNB
University of North Dakota Space Studies Department
UD167958@vm1.nodak.edu "Born to program"

1352. Re: Best freq for 6M AM simplex?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-03 23:27:35 UTC
From: zardoz@ornews.intel.com
Message-ID: <2soe9o$jmh@ornews.intel.com>
Source record: 117539

In article <94154.172802UD167958@NDSUVM1.BITNET> John Nordlie <UD167958@NDSUVM1.BITNET>
writes:
>I'm working on a project with annother ham to convert some radio
>shack toy walky-talkies (49 MHz) to 6M. Having never worked 6M
>before (and I don't know anyone in the area that has), I'm having
>trouble finding out what freq I should use. The HT's are crystal
>controlled, so I'd like to get the freq right on the first try.
>What should I use for AM simplex? I'd like to stay far away from
>the calling freqs, DX, and FM. Anyone have any suggestions?

The 6 meter AM calling freq. is 50.4 Mhz. Try it, you might meet
somebody there. Chances of winning a lottery are somewhat better.

--
zardoz@ornews.intel.com WA7LDV

1353. Re: Getting a VFO on-frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 00:01:10 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2sog86$4qn@tekadm1.cse.tek.com>
Source record: 117547

hawley@aries.scs.uiuc.edu (Chuck Hawley):

>June '94 QST has an article (part 2) on receiver design which if I read
>the thread correctly, concludes that it would be good to leave this diode
>[from the gate of an oscillator FET to ground] out...that it contributes to
>phase noise.

My reading of the discussion in the article is:

- The added diode can increase phase noise, but "merely including a gate-clamping diode does not guarantee higher phase noise".

- Added noise occurs only under some conditions of feedback.

A footnote (number 12) credited to the editor (presumably Dave Newkirk), states that

- The diode does improve frequency stability. Equal stability can be achieved by applying the correct amount of source bias, instead. However, determining the proper amount of source bias isn't as simple as adding the diode.

Rhode uses a schottky diode elsewhere in his circuit. It may have been "obvious" that a schottky diode would be better than silicon as a gate clamping diode, so this may have been what Rhode used in his experiments. I don't know how the two might differ in their noise-adding properties.

I don't believe that phase noise is an important consideration in a VFO unless the oscillator is used as a reference in a phase-locked loop with high multiplying factor, or the oscillator is multiplied to a much higher frequency. Perhaps a professional receiver designer could comment on this.

Roy Lewallen, W7EL
roy.lewallen@tek.com

1354. Re: Best freq for 6M AM simplex?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 01:42:48 UTC
From: walker@opus.hpl.hp.com
Message-ID: <40010007@opus.hpl.hp.com>
Source record: 117540

In rec.radio.amateur.homebrew, zardoz@ornews.intel.com (Jim Garver) writes:

> >trouble finding out what freq I should use. The HT's are crystal
> >controlled, so I'd like to get the freq right on the first try.
> >What should I use for AM simplex? I'd like to stay far away from
> >the calling freqs, DX, and FM. Anyone have any suggestions?

Radio shack walky-talkies are FM not AM.

--
Rick

1355. Re: Any suggestions how to test audio tubes?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 12:19:30 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Jun4.121930.17624@ultb.isc.rit.edu>
Source record: 117549

In article <Cqtyzr.GKt@rb.unisys.com> beaton@rb.unisys.com (Rodger Beaton) writes:
>Any one tried to test audio vac tubes out there?
>I heard groove tubes had some kind of device for musicians?
>How does one set the bias? I have oscilloscope and sig gen.

What's wrong with a tube tester?

73...Jim N2VNO

1356. Vester SSTV Board

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 13:55:47 UTC
From: jeff.smith@n9csa.com
Message-ID: <940604220100413@n9csa.com>
Source record: 117550

Hey Guys,
I just sucessfully completed all my radio tests and am waiting for my tech-plus ticket. As soon as it comes, I plan to upgrade to General. I use an MFJ 1278 for SSTV receive. It lacks a lot of resolution. I really want to get a Vester SSTV board for my rig/computer. I already have the software but am very much electriclly ignorant. Would anybody like to make it for me for $$$? I can pay you whatever is fair. Please help me. Leave me a message and I will get back to you. Thanks, 73's Jeff.

1357. Re: QRP mailing list?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 15:42:02 UTC
From: jpll@vectorbd.com
Message-ID: <CqvqA2.582@vectorbd.com>
Source record: 117548

Jeff Jones (jeffj@crl.com) wrote:
: >In <77049530034n12@131.168.114.12> Brad=Staff%PC=SW%PCPD=Hou@bangate.compaq.com writes:
: >
: >>Is the QRP mailing list still around?
: >

I wish that would get posted on here on a one-way basis

--
- -
-Jim Lill- Vector Board BBS
jpll@vectorbd.com 716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na GEnie: ZKD

1358. What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 18:35:16 UTC
From: dlleigh@frank.harvard.edu
Message-ID: <1994Jun4.143517.32939@husc14.harvard.edu>
Source record: 117545

I've been reading Ulrich Rohde's article in the June issue of QST. In figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds a DAC, which gets filtered and then hard limited. This hard limited signal (a square wave) is then used as an input to the PLL.

My question is: what's the DAC for? Why not just drive the PLL with the MSB of the DDS. It's seems like a waste to make a nice filtered analog signal from the DDS output and then just make a square wave again.

My guess is that is has something to do with decreasing phase noise, but I don't see how it does that. Does anyone have any ideas?

Darren Leigh -- kc6euy
dlleigh@frank.harvard.edu

1359. Need Help on AGC Automatic Gain Control

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 18:55:12 UTC
From: pww1@Ra.MsState.Edu
Message-ID: <pww1.770755856@Ra.MsState.Edu>
Source record: 117544

Hi, I'm posting for a friend...

He is looking for an AGC algorithm for audio processing
using a 16-bit fixed-point DSP uP. Hints on implementation
are welcome, too.

Please email your comments to my email address as I don't
keep up with this newsgroup very often. Thanks in advance.

Email: pww1@Ra.MsState.Edu

1360. CALL FOR VOTES - sci.electronics.cad, sci.electronics.repair

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-04 20:11:16 UTC
From: ab@CSOS.ORST.EDU
Message-ID: <2sqn54$j2u@jadzia.CSOS.ORST.EDU>
Source record: 117546
Cross-posted to: comp.dsp,rec.radio.amateur.homebrew,alt.comp.hardware.homebuilt,rec.audio.tech,comp.home.automation

FIRST CALL FOR VOTES (of 2)
unmoderated group sci.electronics.cad
unmoderated group sci.electronics.repair

Newsgroups lines:
sci.electronics.cad Schematic drafting, printed circuit layout, simulation.
sci.electronics.repair Fixing electronic equipment.

Votes must be received by 29:59:59 UTC, 21 June 1994.

This vote is being conducted by a neutral third party. For voting questions only, contact the votetaker, Brennan T. Price <gt0670e@prism.gatech.edu>. For questions about the proposed groups, contact Mark Zenier <mzenier@netcom.com>.

CHARTERS

SCI.ELECTRONICS.CAD

sci.electronics.cad is an unmoderated group for the discussion of Computer Aided Design software (and systems) for use in designing electronic circuits and assemblies. Topics can include Schematic "Capture" software, Printed Circuit Board layout software, introductory and educational use of circuit simulation software such as Spice, obtaining simulation descriptions (Spice models) for electronic components, and any other computer software that relates to designing electronic circuits at the printed circuit board level.

SCI.ELECTRONICS.REPAIR

sci.electronics.repair is an unmoderated group for the discussion of repairing electronic equipment. Topics to include: Requests for assistance, Where to obtain servicing information and parts, Techniques for diagnosis and repair, and Annecdotes about success, failures and problems with equipment manufacturers.

HOW TO VOTE

Erase everything above the top "-=-=-=-" line and erase everything below the bottom "-=-=-=-" line. Do not erase anything between these lines and do not change the group names.

Give your name on the line that asks for it. For each group, place a YES or NO in the brackets next to it to vote for or against it. If you don't want to vote on a particular group, just leave the space blank. Don't worry about spacing of the columns or any quote characters (">") that your reply

inserts.

Then mail the ballot to: gt0670e@prism.gatech.edu
Just Replying to this message should work.

-=-=-=-=-=- Don't Delete Anything Between These Lines =-=-=-=-=-=-=-=-
sci.electronics.* Ballot <SE-0001> (Don't remove this marker)

Give your real name here:
If you do not give a real name your vote may be rejected.

[Your Vote] Group

[ ] sci.electronics.cad
[ ] sci.electronics.repair
-=-=-=-=-=- Don't Delete Anything Between These Lines =-=-=-=-=-=-=-=-

Anything else may be rejected by the automatic vote counting program. The votetaker will respond to your received ballots with a personal acknowledgement by mail - if you do not receive one within several days, try again. It's your responsibility to make sure your vote is registered correctly.

Only one vote per person, no more than one vote per account. Addresses and votes of all voters will be published in the final voting results list.

--Brennan T. Price, UVV
Running UseVote 3.0

1361. NEED HEATHKIT DOCUMENTATION !! (power amp) please readme ->

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-05 04:46:58 UTC
From: ahall@ux4.cso.uiuc.edu
Message-ID: <2srlc2$o6h@vixen.cso.uiuc.edu>
Source record: 117551

Hello everyone,

I am a in need of the documents/schematics for the following:

Heathkit Power Amp.
model HA-202

If you have them and would be either willing to negotate for them
or make a copy of them, please e-mail me. The Heahtkit power amp
ha-202 is a 2 or 3 transistor c-class that had the option for a nice
black case with fins on top. Very nice design, and unfortunately, something
has gone wrong with it. I am representing Synton Amateur Radio Club
of the University of Illinois for this, so it would benefit a ton of
people if you decide to contact me. (we misplaced the documents
unfortunately)

sorry about that last line there.

73's et hope to speak with you soon,

Allen Hall n9rzc@uiuc.edu
Pres. of Synton ARC UIUC (W9YH)

1362. Re: Getting a VFO on-frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-05 23:49:11 UTC
From: drew@trl.oz.au
Message-ID: <drew.134.0@trl.oz.au>
Source record: 117552

In article <2snptv$ai1@tekadm1.cse.tek.com> royle@tekgp4.cse.tek.com (Roy W Lewallen) writes:
>From: royle@tekgp4.cse.tek.com (Roy W Lewallen)
>Subject: Re: Getting a VFO on-frequency
>Date: 3 Jun 1994 17:40:15 GMT
>From: drew@trl.oz.au (Drew Diamond)
>
>>And (this may start an argument) leave out that useless little diode at the
>>gate- it does no good that I can see, and sometimes causes a deterioration
>>in output and stability.
>
>Sorry, Drew, you're right -- I've gotta argue with your statement. The diode
>has a very noticeable and measurable beneficial effect on stablility. Both
>Wes, W7ZOI, and I have confirmed this. The diode acts as a clamp, never
>conducting more than very, very slightly. It prevents the FET gate-source
>diode from conducting, which would load the tank circuit, reducing its Q
>and increasing drift. In my experiments, a schottky or germanium diode does
>degrade the stability, for reasons I've never investigated. Perhaps it's
>because of the larger reverse leakage currents of these types. But a
>1N914-type silicon diode does effect a very apparent improvement in
>stabililty.
>
>Roy Lewallen, W7EL
>roy.lewallen@tek.com

Thank-you Roy. I read that part (in Solid State Design I think). However, I stand by what I have said, having built literally hundreds of different VFO's (both bread-board and "finished"), my observation is that the diode does little to improve frequency stability.

I would dearly like to know who started this diode hoax- for that's what it is- and just about every USA-published circuit perpetuates the myth.

73, Drew, VK3XU. Telecom Australia Research Laboratories

1363. Re: simple SSB receiving methods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 01:01:57 UTC
From: drew@trl.oz.au
Message-ID: <drew.135.0@trl.oz.au>
Source record: 117554

In article <2shr81$br8@mail.fwi.uva.nl> agterkam@fwi.uva.nl (Dirk-Jan Agterkamp (I89)) writes:
>From: agterkam@fwi.uva.nl (Dirk-Jan Agterkamp (I89))
>Subject: simple SSB receiving methods
>Date: 1 Jun 1994 11:25:53 GMT
>Summary: simple SSB receiving methods
>Keywords: SSB
>Currently I'm planning to build a receiver, who doesn't.
>However, my intension is NOT to use Xtal filters and NOT
>to use a large number of OPAMPS to create sharp lowpass
>filters. My plan is to use a phasing method instead.

>Can anyone give me some advice on how to solve the phase shift
>problem. Does a simple and inexpensive method exist to phase
>shift a wide spectrum of, lets say, 100 kHz by 45 degrees ?
>
>Thanks in advance, Dirk. e-mail: agterkam@fwi.uva.nl
>

Dirk, maybe this is one of those areas where no really simple approach will give satisfactory results. See Richard Hosking's paper in Electronics & Wireless World, Mar. '94, where he describes a direct conversion receiver using the polyphase method. Details are given for an experimental polyphase audio phase shift network and also a cunning way of obtaining your 90 degree L.O. signals. Perhaps not as simple as you would wish however.

73, Drew, VK3XU Telecom Australia Research Laboratories.

1364. Syntor mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 01:48:58 UTC
From: dodeca!clyde@ucrmath.ucr.edu
Message-ID: <2df28095.dodeca@dodeca.UUCP>
Source record: 117553

I understand that the Motorola Syntor commercial mobile
rig can be modified for ham usage but I can't find the mods
for it on ftp.cs.buffalo.edu. Anyone have the mods anywhere?

crv

1365. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 04:51:17 UTC
From: jdow@BIX.com
Message-ID: <jdow.770878277@BIX.com>
Source record: 117555
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

k23690@proffa.cc.tut.fi (Kein{nen Paul) writes:

>Elendir (elendir@enst.fr) wrote:

>> What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least
>> 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would
>> fit also.

>It is hard to find asymmetric USB (and LSB) filters these days.
>In a few years old design for 9 MHz IF, KVG XFM-9B01 and XFM-9B02
>were used. I am not sure which one is LSB and which one is USB as
>contradictory information was given in the article.

>If you settle for a single symmetrical SSB filter, then different
>BFO-frequencies for USB and LSB are needed, but the number of suitable
>filters is much larger. One source for 10.7 MHz filters in England is
>Cirkit (tel. +44-992-441306).

10.7Mhz is not exactly well suited for high quality SSB crystal filter design. Crystals DO change frequency with both temperature and time. Not all crystals, even of similar cuts, change the same way by the same amount. Hence the crystal filter characteristics will change with temperature, such as for Field Day operation, and with time, due to crystal aging. Most of my designs selected much lower IFs when I had the luxury of "doing it right." 5MHz was the highest I figured was marginally acceptable.

>If you think about a single conversion design, 9 or 10.7 MHz IF is quite
>low, usable at 144-146 MHz, but if you are going to use it on 70 cm,
>you should put separate helical front end filters for the 432 MHz DX-
>band and the 435-438 MHz satellite band.

Wellllll, single conversion is not nice no matter how you do it unless you are REALLY anxious to maintain low power operation. For VHF I'd go to a dual conversion with first conversion up to the 70Mhz to 140MHz range. For UHF I'd consider a first IF of 70MHz quite workable. For 144MHz - who uses it? (LA bias. {^_-}) For 144MHz I'd use a 21.4MHz 16KHz wide filter in the first IF and double convert to between 455KHz (mechanical filters) to 5MHz. (I find the filters required in things like Syntors to be a royal PITA because of their necessary narrow bandwidths. They are required to reduce the half-IF response as much as anything. (Fr +/- 1/2 Fif response) I'd rather select something a little less stringent based on requirements for reducing chances of front end overload and if possible custom tailor it to that function.

> Paul OH3LWR
>

>--
>Phone : +358-31-213 3657
>X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI
>Internet: Paul.Keinanen@Telebox.Mailnet.fi
>Telex : 58-100 1825 (ATTN: Keinanen Paul)
>Mail : Hameenpuisto 42 A 26
> FIN-33200 TAMPERE
> FINLAND

(I designed VERY high dynamic range radios for DoD usages for about 20 years before I discovered software burned my fingers a LOT less than soldering irons and was easier as well. At least one design was able to operate with no alteration in BER when receiving -109dBm signals in the presence of inband -5dBm signals (which was as high as I could conventiently generate with the test lashup.) So I have a half an idea what I am doing and am TERRRRRIBLY opinionated. I also do not reveal ham licence call for reasons of privacy having faced a nasty threat based on it.)
{^_^} jdow@bix.com

1366. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 05:03:45 UTC
From: jdow@BIX.com
Message-ID: <jdow.770879025@BIX.com>
Source record: 117556
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

dstock@hpqmoca.sqf.hp.com (David Stockton) writes:

>Elendir (elendir@enst.fr) wrote:

>: I know little about helicoidal filters, so I d be pretty interested in knowing
>: more.

> Connaisez-vous "Handbook of filter synthesis" par Anatol I Zverev,
>John Wiley and sons inc New York 1967 ISBN 0 471 98680 1 ?
>chapitre 9 "Helical filters" . c'est le tome definitif pour le dessein
>mathematique des filtres.

Zverev is an EXCELLENT book. I cannot recommend it highly enough.

> Also, I d like to know what frequency swing you can expect from a Xtal
>: oscillator modulated by a varicap diode.

> (sorry, my French isn't adequate for this part..)

> It depends a lot on the frequency, the circuit, and production
>tolerences. With care a 200 ppm (parts per million) tuning range can be
>reasonably reliably achieved for a favourable frequency and circuit.

Um, 200ppm pretty much wants more than a simple varicap to make it happy. Even with carefully selected (and spurious de-Q-ed inductors) past 200ppm it is remarkably easy to get into odd spurious oscillations due to crystal spurs. As you mention, I'd never try pulling an overtone crystal farther than its base frequency tolerance at best. (I learned that one the hard way. Just barely made that one work.)

> David GM4ZNX

{^_^} jdow@bix.com

1367. Re: Phase noise floor of Motorola CMOS PLL dividers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 05:10:02 UTC
From: jdow@BIX.com
Message-ID: <jdow.770879402@BIX.com>
Source record: 117557

myers@cypress.West.Sun.COM (Dana Myers) writes:

>Does anyone have empirical information on the phase noise floor of the
>dividers in the Motorola CMOS PLL chips, such as the MC145157 and MC145170?
>I'm tending to guess towards -150dBc, a number I've seen published for
>CMOS dividers, but is this accurate?

>This is of particular interest with respect to the on-chip reference
>divider in the Motorola CMOS PLLs. I would guess the phase noise
>level of the reference frequency, when driven with the on-chip oscillator
>using a crystal, is going to be primarily determined by the divider.

>Any comments?

>---
> * Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
> * (310) 348-6043 | mine and do not necessarily *
> * Dana.Myers@West.Sun.Com | reflect those of my employer *
> * This Extra supports the abolition of the 13 and 20 WPM tests *

There is no single number you can attribute to a noise floor. I satisfied myself of that one with MECL and TTL many nasty years ago. You CAN, however, make some interesting calculations that prove to be fairly accurate. The first stage is perhaps the most important one. It is the stage which converts your oscillator signal into digital. From there most of the rest of the noise can be "neglected" for first approximations. The problem comes in when you divide the input frequency. The more you divide the more the input noise, which is basically DC to infrared or so, aliases onto your desired signal. By the time you have divided by a thousand or more this becomes "significant" in low noise designs.

As an aside, I find it amusing to be worried about noise when using the on chip oscillator. They do not usually drive a crystal into a highly stable low noise regime. Nor would the onchip conversion from the chip's oscillator to digital be all that low noise.

{O.O} jdow@bix.com

1368. SMALL HT POUCHES 4SALE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 06:17:53 UTC
From: ddevera@bbs.dsnet.com
Message-ID: <wcJHNc6w165w@bbs.dsnet.com>
Source record: 117558

****

VERSA-POUCHES

****

!!!!!!2 VERSIONS!!!!!!

YAESU FT-11R and small HT owners,

For those of you that have requested HOLD DOWN STRAPS on the VERSA-POUCH,

We now have another version of the VERSA-POUCH with hold down straps. Which

holds down your HT and prevents it from falling out of the case.

Because of this new version, the CASE PRICE will slightly increase to 6.00 per

case, 5.50 for 2 or more. If interested please send a reply message ASAP.

The makers of this pouch will only produce, these POUCHES with hold down straps,

by request. So let me know how many you want and we'll take it from there...

Depending on the size of the order, it'll take 1 day, for single pouches to

1 Week plus, for larger orders. Also, because of this NEW VERSION, the VERSA-

POUCH can be customized to fit MOST small HT's, but you'd need to pay & order

in advance.

PRICE BREAK DOWN:

MODEL #: VP-1-NS

Regular Pouch, no hold down straps = $4.00 or $3.50ea. for 2 or more.

MODEL #: VP-1-WS

NEW VERSION Pouch, with hold down straps = $6.00 or 5.50ea. for 2
or
more.

Even for $6.00, you still can't go wrong!!!!

PLEASE DO NOT FORGET TO INCLUDE SHIPPING...

Thanks again to many of you for your interests and suggestions... SPREAD
THE

WORD...

73 David.

1369. Vester SSTV

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 08:31:21 UTC
From: jeff.smith@n9csa.com
Message-ID: <940606170045428@n9csa.com>
Source record: 117563

Hey guy's
Would anybody like a challenge? I was wondering if anybody would build me a SSTV demodulator that was featured in Jan. 1994 QST (Vester). I am not very good at electronics. Please help. Let me know by a reply to this address. I will pay for it.
Thanks, Jeff

1370. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 09:37:20 UTC
From: dstock@hpqmoca.sqf.hp.com
Message-ID: <Cqyyq8.MxJ@hpqmoea.sqf.hp.com>
Source record: 117559
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

[No readable article body recovered]

1371. Re: Best freq for 6M AM simplex?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 15:46:32 UTC
From: zardoz@ornews.intel.com
Message-ID: <2svgd9$hn0@ornews.intel.com>
Source record: 117566

In article <40010007@opus.hpl.hp.com> walker@opus.hpl.hp.com (Rick Walker) writes:
>In rec.radio.amateur.homebrew, zardoz@ornews.intel.com (Jim Garver) writes:
>
>> >trouble finding out what freq I should use. The HT's are crystal
>> >controlled, so I'd like to get the freq right on the first try.
>> >What should I use for AM simplex? I'd like to stay far away from
>> >the calling freqs, DX, and FM. Anyone have any suggestions?
>
>Radio shack walky-talkies are FM not AM.
>
>--
>Rick

Rick, Good Buddy, I didn't write the text attributed to me in your post.
Please check your attributator.

I did advise the originator that 50.400 Mhz is the AM calling freq. and
that almost nobody is ever there, at least out here in Oregon. I do
occasionally monitor 50.4 as well as 52.525(FM calling freq) and do
hear signals on 52.525 when conditions are right or the locals are on.
I would like to use my Clegg 99'er sometime. Please get on 6 meter AM
and call CQ if you can. While operating 10 meter AM a JA station told
me that 6 meter AM is popular in Japan while 10 meters is mostly FM over
there. I have yet to work a JA on 6 meter AM, not to mention another
state besides Washington.
Why isn't 6 meters used for satellite operation?
--
zardoz@ornews.intel.com WA7LDV

1372. LowFER: VLF Activities & VLF Transcivers ???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 16:22:02 UTC
From: rs@chopin.ife.ee.ethz.ch
Message-ID: <2svifa$kk0@elna.ethz.ch>
Source record: 117560

I am interested to learn more about VLF activities. I heard that there
are some HAMs involved in VLF work and that there are LowFER groups.
Currently I am breeding on some VLF-transceiver ideas and would be glad
for suggestions, references etc.

Any pointers ? Thanks for your help.

vy 73s,
Rolf

--
--- * * * ---

Rolf Sommerhalder
Swiss Federal Institute of Technology (ETH) home address:
Electronics Laboratory ETZ H60.1 c/o Rindlisbacher
Gloriastrasse 35 Wermatswilerstrasse 96
8092 Zurich / Switzerland 8610 Uster / Switzerland

Voice +41 1 632 76 40 (or 632 51 53) Voice +41 1 941 59 28
Fax +41 1 262 16 55 AX.25 HB9CWP @ HB9OS
E-Mail rolf.sommerhalder@ife.ee.ethz.ch

1373. Re: Transmitting Tube Cooling, Summary

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 16:26:54 UTC
From: landisj@drager.com
Message-ID: <1994Jun6.122654.77@drager.com>
Source record: 117507

In article <1994Jun1.194957.19513@ccd.harris.com>, drs@ccd.harris.com (Doug Snowden) writes:
> 3. The idea I like the best is the use of temperature sensitive paint on the
> base of the tube. It was recommended that a few temperature ranges be
> painted on the base. The tube specs have the max. allowable base seal temp.
> All I need to do now is find a source.

Someone makes a series of stick on labels which have a range of dots that change color according to the max temperature that they were exposed to. The brand Tempril maybe or Tempilabel perhaps? Used to stick them on power transistors and heat sinks when I worked in the field.

--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WB3JOE.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.

1374. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 17:44:12 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2svn9c$12o@hpscit.sc.hp.com>
Source record: 117561
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <jdow.770879025@bix.com>, jdow on BIX <jdow@BIX.com> wrote:

>Um, 200ppm pretty much wants more than a simple varicap to make it happy. Even
>with carefully selected (and spurious de-Q-ed inductors) past 200ppm it is
>remarkably easy to get into odd spurious oscillations due to crystal spurs. As
>you mention, I'd never try pulling an overtone crystal farther than its base
>frequency tolerance at best. (I learned that one the hard way. Just barely
>made that one work.)
>
>{^_^} jdow@bix.com

Of course you need more than a simple varicap to get 200 ppm (see my previous post). I happened to need to build a 19.2 MHz. VCXO last week, and I had no trouble tuning 4000 ppm below series resonance and 2000 ppm above series resonance (that's a total of over 100 kHz.). When I tried to go above 2000 ppm on the high side, I did have some (predictable) trouble jumping to a spurious xtal response up there.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1375. Converting the Radio Shack 5ch 49MHz ht to 6m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 21:04:00 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Jun6.210400.21750@ttinews.tti.com>
Source record: 117562

Well, this isnt how I wanted to publish this, but it seems that
it's necessary. The 5 ch units are pll controlled and if you look
at the schematics you will notice that the base freq for the pll
is xtal controlled. If you look closer you willl also notice the
Aussies have a version of this thing running in the 55MHz area
and the only difference is the pll xtal!

Therefore, find a xtal at or near 10.24 MHz - this will give you
operation from 50.610 MHz in 15KHz steps. You might also want to
reduce the size of the final transistor's bias resistor, 8-10Kohms
seems to increase the power out greatly..like 450mW or so, but the
battery life is dramatically foreshortened! Peak and tweek as needed.

It's not good for repeaters, it's not powerful, but it IS CHEAP!
..and it is 6m FM which is really fun at hamfests, swap meets and
the like where everyone else is competing for the usual 146.52 and
223.5 and such like.

Next time I'll tell you how to easily convert a cheap CB ht to
run at 29.6MHz...with FM optional!

73! de KB6LUY/temp AA

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

1376. 40 meter cw qrp rig and 65 watt computer power supply for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 21:38:17 UTC
From: bad1679@ultb.isc.rit.edu
Message-ID: <1994Jun6.213817.9201@ultb.isc.rit.edu>
Source record: 117468
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew

I am selling a homebrew 40 meter cw transciever. It covers 7.000-7.075
and about 7.100 - 7.175 mhz, puts out about 2 watts. The receiver is a
direct conversion type, but uses very good audio filtering.

The rig was based on the article in August 1980 issue of QST by W7EL and
improved with better double tuned band pass filter and a chebychev filter in
front of the audio preamp.

I am also selling a 65 Watt computer power supply (I believe it came out of an
XT).

Any inquiries, please email to bad1679@ultb.isc.rit.edu

Thanks..

Bernie Doehner nu1s/2

--
Electrical Engineering, Rochester Institute of Technology, Rochester,NY
Ax25 Packet: NU1S @ WB2PSI.#WNY.NY.USA.NOAM (normal packet route)
TCP/IP: nu1s@nu1s.ampr.org [44.69.0.37]
Internet (school): bad1679@ultb.isc.rit.edu

1377. PCB via Laserjet

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 22:05:25 UTC
From: jmiller@peds.eyes.arizona.edu
Message-ID: <2t06j5$et1@news.CCIT.Arizona.EDU>
Source record: 117564

I have heard that one can make a PCB layout 1:1 scale, then iron on the black stuff onto the printed circuit board with a clothes iron, and the black stuff binds to the copper and serves as resist.

Has anyone done this?

What paper works best?

Joe KI7WV

1378. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 23:09:18 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2t0aau$neb@abyss.West.Sun.COM>
Source record: 117469

In article 32939@husc14.harvard.edu, dlleigh@frank.harvard.edu (Darren Leigh) writes:
>I've been reading Ulrich Rohde's article in the June issue of QST. In
>figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
>a DAC, which gets filtered and then hard limited. This hard limited
>signal (a square wave) is then used as an input to the PLL.
>
>My question is: what's the DAC for? Why not just drive the PLL with the
>MSB of the DDS. It's seems like a waste to make a nice filtered analog
>signal from the DDS output and then just make a square wave again.
>
>My guess is that is has something to do with decreasing phase noise, but
>I don't see how it does that. Does anyone have any ideas?

Yeah. The noise output of a DDS synthesizer is determined, in part, by the
DAC. In theory, the maximum attainable signal/noise ratio of the DDS is
6dB * Number of DAC bits. A 10 bit DAC promises 60dB S/N, a 1 bit DAC promises
6dB S/N.

There's a trick, though; the spurious noise output of a DDS is not always
evenly distributed; sometimes it isn't distributed very much. This has the
effect of producing an output which is mostly very clean with a limited number
of severe spurs.

In the case of using the MSB only, there would be some specific frequencies
where the output was a very clean, symetrical square wave. However, at most
frequencies, you'd have an asymetrical square wave which is different from
cycle to cycle; serious phase noise.

Even when you limit a sine wave into a sqaure wave, you don't change the
noise due to phase variations (i.e. phase noise) (limiting does reduce/eliminate
noise due to amplitude variations). Therefore, to get a low phase noise square
wave from a DDS, you need to generate the lowest possible noise sine wave, then
limit it.

Does this help?

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1379. Radio Shack CB HTs cvt to 10m?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-06 23:11:28 UTC
From: j.perry@lynx.dac.neu.edu
Message-ID: <2t0af0$q88@lynx.dac.neu.edu>
Source record: 117565

Reading the recent messages about adapting radio shack HTs to 6M got me thinking

I have a pair of Radio Shack CB HTs with an A and B channel in which you can place crystals. I also have a (1 or 3 watt) larger HT with 3 channels

I am wondering: How hard would it be to get these HTs working on 10M ? Simply put new crystals in and be ready for QRP FM operation on 10M?

Please send a copy of any responses direct to me also (j.perry@lynx.dac.neu.edu)

Thanks!

--

Jeffrey Perry
j.perry@lynx.dac.neu.edu

1380. Re: PCB via Laserjet

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 01:10:58 UTC
From: edbu@sepia.wv.tek.com
Message-ID: <2t0hf2INN6qd@sepia.wv.tek.com>
Source record: 117567

Hi Everyone,

Earlier, I had mentioned in a posting that I had a few twists on this topic.

If you can get your hands on a copy of Midnight Engineering (Jan-Feb 94 I think) There is a pretty good article on doing just this.

There are some companies that are selling specialty media for this purpose.
My experience with them is that they work OK, but are spendy (OK, so it's only $2 per sheet, but I'm really cheap). What I have found that works the best is Ink jet paper.

To recap the basic process:

1) Print the circuit board image on a laser printer, reverse image using whatever computer and drawing package you have available.
(I prefer using ORCAD with a Postscript driver, but have used a Mac 512 with MacDraw in the past)

2) Register both layers (if you are doing two sided boards) on a light table (or against a window looking outside at the daylight)
Tape three sides of the papers to form a little envelope.

3) Slip a peice of copper circuit board into the envelope you made.
You will have to make sure that it is big enough to cover all the traces, but small enough to fit into the envelope.

4) Iron one side of the circuit board thoroughly, using the edge of the iron as much as possible. When in doubt of whether the toner is sticking to the board, iron some more (more is better) you should spend about a minute or two per side. Turn the board over, iron the other side.

5) Peel off the paper and etch using ferric chloride (I haven`t tried the other chemicals, but they should work fine)

6) Clean off the excess toner using steel wool, ajax, etc.

7) Drill and fill.

Special twists and notes:

Some folks like to drill before etching, that works OK, but I like to see the results first before I drill it. If you drill afterward, you might lift pads here and there. Practice helps. If you drill before, sometimes the edges of the hole will etch too.

Use Ink-Jet printer paper, the smoothest you can find. Because Ink-Jet Paper has an absorbant coating (usually clay coated to aid in drying time), the fibers of the paper usually do not get imbedded in the toner.

Earlier, I had experimented with a variety of papers, and found these to work the best. Other papers tend to leave paper fibers in the toner which is fused into the copper, this tends to make pin-holes in the etched board.

Before you try peeling the paper, let it soak in water to loosen the paper. Because the clay coating is put onto many of these types of paper with water, water tends to loosen the paper from the clay coating. I usually let them soak for a half-hour or so, but have soaked as little as 5 minutes, or as long as overnight with no adverse effects. The board soaked overnight required little rubbing to loosen the paper, the board that only soaked for 5 minutes took a lot of rubbing with the fingers to get all of the paper off. A lot of it depends on the paper being used (I am using Tektronix ColorQuick paper, but since I work for Tektronix, it is cheap and plentiful...your milage may vary).

Use the sharpest drill bits you can find. Check with a local dentist to see if they have any dull dental burrs you can have, or buy some from the local hobby store.

I have been using a Tee-shirt press to laminate my images to the circuit board. Having a compliant rubber surface works a lot better than using a hand iron.

A friend of mine is using a small iron from a hobby shop used for applying heat shrink plastics to remote control airplanes. I plan to make a press out of an old waffle iron (two heated surfaces) and some silicone foam pads. Again, the rubber of the Tee-shirt press tends to do a much better job of laminating the toner to the board than using a home type iron.

After making the circuit board and cleaning thoroughly, I have taken another laser print of the parts placement silkscreening, and laminated it to the board using the same process, it looks really impressive. I have also laminated the solder resist layer onto a finished board, this also looks good, and has the added bonus of protecting the board from oxidation while still allowing it to be soldered.

You may have to touch up the board with a permanent ink marker, but in the 25 or so boards I've done so far, this has only been necessary on the first few. Oh yeah, so far, this method has worked for RF, digital, surface mount down to about 8 mil traces (use a good printer for these), and of course, through hole.

I`m working on through hole plating next, but that is a little more tricky. Midnight Engineering had a good article on doing that in some issue?

Thanks to all those who sent me E-Mail, sorry I didn't have time to reply directly, but work keeps me pretty busy. I hope this helps.

The usual disclaimers apply, your milage may vary, etc.

Ed Burress
Tektronix, Inc. MS 63-356
Wilsonville, Ore. 97070-1000

"a wise monkey never monkeys with another monkeys monkey"

1381. Help indentify 2SC2694

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 03:13:44 UTC
From: david@pitvax.xx.rmit.edu.au
Message-ID: <2t0oi4$hf4@aggedor.rmit.EDU.AU>
Source record: 117473

I've had a pair of RF power transistors in the junk box for some time now, and thought I'd enqire as to what they are, in case it spurs me to do something with them!

They are 2SC2694, and have the three diamonds in a circle symbol on them which I believe is Mitsubishi.

I need to know: type of service

frequency range

output power and power gain

I have looked in a couple of sources but cannot find this part number.

Thanks for any possible assistance...

David

1382. Re: NEED HEATHKIT DOCUMENTATION !! (power amp) please

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 04:04:57 UTC
From: raym@omnifest.uwm.edu
Message-ID: <2t0rl9$kho@omnifest.uwm.edu>
Source record: 117472

```
Have extra identical amp functional. Will donate to school. Contact via
E-mail raym@omnifest.uwm.edu
###
```

1383. 900mhz transciever

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 06:07:33 UTC
From: au440@cleveland.Freenet.Edu
Message-ID: <2t12r5$gpm@usenet.INS.CWRU.Edu>
Source record: 117470

How would I build a snythesized 900 mhz transciever? I
want to build a separate unit for contesting. Are there any
good recipies that someone could recommend or acquire for me?
--
Kieran D. au440

1384. Re: SSB Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 07:51:09 UTC
From: jdow@BIX.com
Message-ID: <jdow.770975469@BIX.com>
Source record: 117471
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In article <jdow.770879025@bix.com>, jdow on BIX <jdow@BIX.com> wrote:

>>Um, 200ppm pretty much wants more than a simple varicap to make it happy. Even
>>with carefully selected (and spurious de-Q-ed inductors) past 200ppm it is
>>remarkably easy to get into odd spurious oscillations due to crystal spurs. As
>>you mention, I'd never try pulling an overtone crystal farther than its base
>>frequency tolerance at best. (I learned that one the hard way. Just barely
>>made that one work.)
>>
>>{^_^} jdow@bix.com

>Of course you need more than a simple varicap to get 200 ppm (see my previous
>post). I happened to need to build a 19.2 MHz. VCXO last week, and I had
>no trouble tuning 4000 ppm below series resonance and 2000 ppm above series
>resonance (that's a total of over 100 kHz.). When I tried to go above 2000 ppm
>on the high side, I did have some (predictable) trouble jumping to a spurious
>xtal response up there.

>Rick Karlquist N6RK
>rkarlqu@scd.hp.com
I have calculated and simulated circuits which allowed that much tuning range.
Stability analysis of the results left me "unimpressed." If I wanted that much
tuning range I'd find another route to happiness unless DESPERATELY in need of
low power. (Um, a surprisingly good approach would be a SAW oscillator based
VCO and a mixer to the lower frequency. And it'd be about as stable as a 19MHz
oscillator pulled 100KHz. Analysis showed stability was more determined by the
capacitors and inductors used than the crystal once you'd be even a quarter of
the way "out there." Of course my definition of "acceptable stability" may be
much more stringent than yours. I was designing stuff for DoD type apps. {^_-})

(Of course the last RF design I did was near a dozen years ago and was a quite
different design than the sorta thing you were looking at here. How'd you like
a workable design (not schematic - just design) for a frequency synthesizer
that'd take 10MHz in and give an output between 9.999997 and 10.000003MHz
with one or two part in 10 to the 13th step size.)
{^_-} jdow@bix.com <- winking.

1385. Re: Best freq for 6M AM simplex?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 14:10:42 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun7.141042.27673@ke4zv.atl.ga.us>
Source record: 117478

In article <2svgd9$hn0@ornews.intel.com> zardoz@ornews.intel.com (Jim Garver) writes:
>Why isn't 6 meters used for satellite operation?

Because it isn't a ham band in region one, and it isn't allocated to
the amateur satellite service as a result.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1386. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 14:13:56 UTC
From: "William P. Osborne" <wosborne@nmsu.edu>
Message-ID: <40371.wosborne@nmsu.edu>
Source record: 117474

On 6 Jun 1994 23:09:18 GMT,
Dana Myers <myers@spot.West.Sun.COM> wrote:

>In article 32939@husc14.harvard.edu, dlleigh@frank.harvard.edu (Darren Leigh) writes:
>>I've been reading Ulrich Rohde's article in the June issue of QST. In
>>figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
>>a DAC, which gets filtered and then hard limited. This hard limited
>>signal (a square wave) is then used as an input to the PLL.
>>
>>My question is: what's the DAC for? Why not just drive the PLL with the
>>MSB of the DDS. It's seems like a waste to make a nice filtered analog
>>signal from the DDS output and then just make a square wave again.
>>
>>My guess is that is has something to do with decreasing phase noise, but
>>I don't see how it does that. Does anyone have any ideas?
>
>Yeah. The noise output of a DDS synthesizer is determined, in part, by the
>DAC. In theory, the maximum attainable signal/noise ratio of the DDS is
>6dB * Number of DAC bits. A 10 bit DAC promises 60dB S/N, a 1 bit DAC promises
>6dB S/N.
>
>There's a trick, though; the spurious noise output of a DDS is not always
>evenly distributed; sometimes it isn't distributed very much. This has the
>effect of producing an output which is mostly very clean with a limited number
>of severe spurs.
>
>In the case of using the MSB only, there would be some specific frequencies
>where the output was a very clean, symetrical square wave. However, at most
>frequencies, you'd have an asymetrical square wave which is different from
>cycle to cycle; serious phase noise.
>
>Even when you limit a sine wave into a sqaure wave, you don't change the
>noise due to phase variations (i.e. phase noise) (limiting does reduce/eliminate
>noise due to amplitude variations). Therefore, to get a low phase noise square
>wave from a DDS, you need to generate the lowest possible noise sine wave, then
>limit it.
>
>Does this help?
Dana: I am not sure this is as simple as you make it out to be. The
polarity of the sinewave after the DAC is determined by the MSB before the
DAC and the squarewave after the limiter (1 bit quanterizer) is determined
solely by the polarity of the sinewave. If the DAC and the limiter were
perfect then the output of the one bit quantizer would be exactly the same
as the MSB before the DAC, i.e., the only differences are due to error in

the conversion process from digital to analog to digital. I believe that the phase noise out of the entire synth. loop will not change if you eliminate the DAC and use the MSB out of the DDS, which means that the DDS could be simpler also or that the phase noise is pretty bad in either case.

William Osborne, AA5ZQ
wosborne@nmsu.edu
Professor ECE Dept.
PO BOX 30001, Dept. 3-O
New Mexico State University
Las Cruces, NM 88003-0001
505-646-3919

1387. DUAL BAND RADIO 4SALE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 15:42:35 UTC
From: ddevera@bbs.dsnet.com
Message-ID: <364JNc6w165w@bbs.dsnet.com>
Source record: 117475

****

DUAL BAND HT 4SALE

****

Have 1 DJ-580T, ALINCO RADIO 4$ALE, w/ ACCESSORIES. This is a
nice

little HT, I have one of my own. The HT is barely 1 Month old and

like NEW.

If you buy NEW(with NO ACCESSORIES) it'll cost you just under
$420,

depending on where you live and what ur sales tax is.

Selling this radio for $335.00 + Shipping with a few accessories:

* MICROPHONE

* PLUG IN LIGHTER ADAPTER

* RADIO CASE

If intersted, let me know... ASAP...

73 - Dave!

1388. Re: PCB via Laserjet

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 16:19:29 UTC
From: jmiller@peds.eyes.arizona.edu
Message-ID: <2t26mh$rs1@news.CCIT.Arizona.EDU>
Source record: 117476

On behalf of the world, thanks for the detailed instructions on making pc boards on the cheap!

You mention "Midnight Engineering" - I have never seen this. Is it a newsletter?

Tnx
Joe KI7WV

1389. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 16:24:10 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2t26va$hih@hpscit.sc.hp.com>
Source record: 117477

In article <40371.wosborne@nmsu.edu>,
William P. Osborne <wosborne@nmsu.edu> wrote:

>Dana: I am not sure this is as simple as you make it out to be. The
>polarity of the sinewave after the DAC is determined by the MSB before the
>DAC and the squarewave after the limiter (1 bit quanterizer) is determined
>solely by the polarity of the sinewave. If the DAC and the limiter were
>perfect then the output of the one bit quantizer would be exactly the same
>as the MSB before the DAC, i.e., the only differences are due to error in
>the conversion process from digital to analog to digital. I believe that
>the phase noise out of the entire synth. loop will not change if you
>eliminate the DAC and use the MSB out of the DDS, which means that the DDS
>could be simpler also or that the phase noise is pretty bad in either case.
>William Osborne, AA5ZQ

This is incorrect. The MSB at the DAC input has a jitter of half the clock
period, because it can only change state at a clock transition. The
reconstruction process of D/A conversion and requantizing lowers the jitter
at the limiter output by (on the order of) 6 dB per bit of D/A resolution.
This is because there is a time interpolation effect that allows the limiter
to change state in units of 1/2^n fractions of a clock period.

This topic is a very common source of misconceptions about DDS.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1390. Re: 900mhz transciever

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 17:03:26 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Jun7.170326.12988@vlsi.polymtl.ca>
Source record: 117490

In article <2t12r5$gpm@usenet.INS.CWRU.Edu> au440@cleveland.Freenet.Edu (Kieran Donahue) writes:
>
> How would I build a snythesized 900 mhz transciever? I
>want to build a separate unit for contesting. Are there any
>good recipies that someone could recommend or acquire for me?
>--
Kieran:

The simplest way is to use a VHF or UHF radio as an IF and build yourself a transverter. Probably the cheapest way too.

Nick

--
****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

1391. Just a test

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 17:46:02 UTC
From: simon@indiana.edu
Message-ID: <simon-070694124517@sb220-718980.ucs.indiana.edu>
Source record: 117479

Hope you kids are having fun with your suds! This is only a test.

1392. Ten-Tec Direct conversion kit -- getting on frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 18:22:42 UTC
From: vinod@watson.ibm.com
Message-ID: <2t2dti$1a1l@watnews1.watson.ibm.com>
Source record: 117495

I recently got the Ten-Tec direct conversion receiver (kit #1056), and put it together for 80m. (The kit comes with parts for all the different bands). My intention was to use it for receiving W1AW code practice. After I put the kit together, I was able to receive various signals, but mostly seemed to be digital modes, and perhaps couple of beacons, but no W1WA.

After checking that I had used all the component values they specified for the frequency determining circuits, yesterday I went over to a friends house, to check it out with an oscilloscope. After playing around with all the adjustments they specified, we found that the lowest we could go was about 3.8MHz, and the highest was about 4.3MHz. No wonder I could not get W1AW, which is at 3.5815 or so..[The specs say that the 80m module should get me between 3.5 and 4.0MHz].

Now, I am new to this stuff..so, if you can tell me what I should try to get this fixed, I would appreciate it very much. The receiver uses an NEC612AN mixer-oscillator (similar to NE602 according to the documentation).

Here is what I plan to try:

1. Resolder all the frequency determining components.

2. Try changing (ie increasing the capacitance) of the circuit which determines the local osciallator frequency. (Currently C3=150p, C4=150pf, L2=8.0uH, L3=8.2uH, C3 connected between pins 6 and 7, C4 connected from pin 7 to gnd, and L2 and L3 connected in series from pin 6 to Gnd through a 0.1pf capacitaor, and a varactor tuning circuit connected to the top of L2 ie aafter the 0.1pf cap).

3. Any other suggestions?

Many thanks in advance for any help, advice you can offer.

--vinod
email: vinod@watson.ibm.com

1393. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 18:44:20 UTC
From: dank@tekgp4.cse.tek.com
Message-ID: <2t2f64$55v@tekadm1.cse.tek.com>
Source record: 117481

In article <40371.wosborne@nmsu.edu> <wosborne@nmsu.edu> writes:
>>In article 32939@husc14.harvard.edu, dlleigh@frank.harvard.edu (Darren Leigh) writes:
>>>In figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
>>>a DAC, which gets filtered and then hard limited. This hard limited
>>>signal (a square wave) is then used as an input to the PLL.

>>>My question is: what's the DAC for? Why not just drive the PLL with the
>>>MSB of the DDS. It's seems like a waste to make a nice filtered analog
>>>signal from the DDS output and then just make a square wave again.

>>>My guess is that is has something to do with decreasing phase noise, but
>>>I don't see how it does that. Does anyone have any ideas?

>The polarity of the sinewave after the DAC is determined by the MSB before the
>DAC and the squarewave after the limiter (1 bit quanterizer) is determined
>solely by the polarity of the sinewave. If the DAC and the limiter were
>perfect then the output of the one bit quantizer would be exactly the same
>as the MSB before the DAC, i.e., the only differences are due to error in
>the conversion process from digital to analog to digital. I believe that
>the phase noise out of the entire synth. loop will not change if you
>eliminate the DAC and use the MSB out of the DDS, which means that the DDS
>could be simpler also or that the phase noise is pretty bad in either case.

This analysis leaves out the effect of the anti-aliasing filter between the
DAC and the limiter. Because of the "memory" of the filter, the filter output
will cross zero at some time dependent not only on when the DAC output crosses
zero, but also dependent on the DAC levels before and after the zero-crossing.
It is this extra information that allows an "interpolation" of zero-crossing
times to much finer resolution than the DDS clock period. Using just the MSB
produces edges that are rounded (in time of occurence) to the nearest clock
period; resulting in much higher phase noise.

- Dan Knierim
These opinions aren't worth the standard disclaimer form they're printed on!

1394. RADIO-TO-TELEPHONE INTERCONNECT CIRCUIT?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 18:56:56 UTC
From: pennind@aa.wl.com
Message-ID: <1994Jun7.135656.1@aa.wl.com>
Source record: 117480

CAN ANYONE DIRECT ME ON HOW TO FIND A CIRCUIT THAT WILL INTERCONNECT MY BASE STATION TO THE TELEPHONE AND ALLOW ME TO MAKE AUTOPATCHES WITH MY HT...

ANY SUGGESTIONS APPRECIATED

THANKS

DON, N2JYK
BASKING RIDGE, NJ 07920

1395. Re: Converting the Radio Shack 5ch 49MHz ht to

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:07:41 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2t2k2d$c2v@abyss.West.Sun.COM>
Source record: 117482

In article 21750@ttinews.tti.com, sorgatz@avatar.tti.com (Erik Sorgatz) writes:
> Well, this isnt how I wanted to publish this, but it seems that
>it's necessary. The 5 ch units are pll controlled and if you look
>at the schematics you will notice that the base freq for the pll
>is xtal controlled. If you look closer you willl also notice the
>Aussies have a version of this thing running in the 55MHz area
>and the only difference is the pll xtal!

Slow down, Erik. Changing the 10.24 Mhz crystal also changes the
channel spacing. This could make it difficult to interoperate with
other synthesized radios on 5kHz channels, since you'll be on 5.774Khz
channels (for example).

The other little detail you're leaving out is that the 10.24 MHz rock
is used to provide the 2nd mixer injection. Changing this rock
changes the 2nd IF. Oops, now you have to change the 2nd IF filter.
Not necessarily practical.

You *are* referring to the 5 channel radio, catalog #21-402, right?
If so, there is no mention of the Aussie radio in my service manual.
The TRC-505 does have an Aussie version at 55.05Mhz, but it is
crystal controlled, i.e. no PLL.

> Therefore, find a xtal at or near 10.24 MHz - this will give you
>operation from 50.610 MHz in 15KHz steps. You might also want to
>reduce the size of the final transistor's bias resistor, 8-10Kohms
>seems to increase the power out greatly..like 450mW or so, but the
>battery life is dramatically foreshortened! Peak and tweek as needed.

Oops. Never mind that the T/R switch is non-existant, that, even if
you change the "PA" bias and actually get 450mW (where'd this number
come from? Experimental results?) that the front end isn't designed
to cope with 13V p-p (that's 450mW in 50ohms). Are you talking about
the TRC-503 radio?

> 73! de KB6LUY/temp AA

Congrats on the upgrade, Erik!

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1396. Poor Man's CAE ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:19:18 UTC
From: e89_bond@etek.chalmers.se
Message-ID: <1994Jun7.201918.16842@etek.chalmers.se>
Source record: 117483

Hi there,

I read in VHF Communications 1/93 about some programs for radio
design called Poor Man's CAE. The programs have been compiled
and documented by DJ5UN. Are these avaiable on some ftp site? Please
respond here or by e-mail.

73 de Fredrik

Chalmers I Fredrik Bonde I e-mail: e89_bond@etek.chalmers.se
Tekniska I Gibraltargatan 82-149 I packet: SM6UBC @ SK6YW.O.SWE.EU
H|gskola I 412 79 G|teborg I tel: +46-(0)31-20 88 76
I SWEDEN I

1397. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:31:49 UTC
From: jdow@BIX.com
Message-ID: <jdow.771021109@BIX.com>
Source record: 117485

"William P. Osborne" <wosborne@nmsu.edu> writes:

>On 6 Jun 1994 23:09:18 GMT,
>Dana Myers <myers@spot.West.Sun.COM> wrote:

>>In article 32939@husc14.harvard.edu, dlleigh@frank.harvard.edu (Darren Leigh) writes:
>Dana: I am not sure this is as simple as you make it out to be. The
>polarity of the sinewave after the DAC is determined by the MSB before the
>DAC and the squarewave after the limiter (1 bit quanterizer) is determined
>solely by the polarity of the sinewave. If the DAC and the limiter were
>perfect then the output of the one bit quantizer would be exactly the same
>as the MSB before the DAC, i.e., the only differences are due to error in
>the conversion process from digital to analog to digital. I believe that
>the phase noise out of the entire synth. loop will not change if you
>eliminate the DAC and use the MSB out of the DDS, which means that the DDS
>could be simpler also or that the phase noise is pretty bad in either case.
>William Osborne, AA5ZQ
>wosborne@nmsu.edu
>Professor ECE Dept.
>PO BOX 30001, Dept. 3-O
>New Mexico State University
>Las Cruces, NM 88003-0001
>505-646-3919

If you analyze the spectrum on the MSB of the accumulator output you will find
that it is particularly rich in spurious.

DDSs have two terms which determine their theoretical spurious content. One is
the number of bits in the sine table's output and the other is the number of
bits in the sine table's input. When these two numbers fall to 1 you will
discover that the levels of spurious produced are "unpleasant" at best. A
case in point would show this phase noise. Suppose each cycle is divided up
into somewhat less than 5 accumulator clocks. Not a lot less, though. First
you'll notice that the MSB output is no longer a square wave. Second you will
note that it is in fact a 2 clocks one side and 3 the other side wave which
periodically swaps sides for the 2 and 3 clocks. ANalyze this sort of waveform
for spurious,

Now take the same thing and run it through a sine table. The zero crossings on
the sine table are much closer to a "regular" period and describe something
much closer to a squarewave - within one accumulator clock. If you follow the
DAC with a filter this jitter is itself reduced. (You have a trade off here,
though. For many apps you may be able to replace the DAC with an N bit
comparator with the other input set to "zero". Thanks for pressing the issue
so I'd have this insight. MSB is not enough, as I said. But a digital
N bit comparator may be as good as an N bit by N bit EPROM sine table.)

<^_^> Joanne Dow, Amiga Exchange Editor
jdow@bix.com

1398. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:44:01 UTC
From: jdow@BIX.com
Message-ID: <jdow.771021841@BIX.com>
Source record: 117487

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In article <40371.wosborne@nmsu.edu>,
>William P. Osborne <wosborne@nmsu.edu> wrote:

>>Dana: I am not sure this is as simple as you make it out to be. The
>>polarity of the sinewave after the DAC is determined by the MSB before the
>>DAC and the squarewave after the limiter (1 bit quanterizer) is determined
>>solely by the polarity of the sinewave. If the DAC and the limiter were
>>perfect then the output of the one bit quantizer would be exactly the same
>>as the MSB before the DAC, i.e., the only differences are due to error in
>>the conversion process from digital to analog to digital. I believe that
>>the phase noise out of the entire synth. loop will not change if you
>>eliminate the DAC and use the MSB out of the DDS, which means that the DDS
>>could be simpler also or that the phase noise is pretty bad in either case.
>>William Osborne, AA5ZQ

>This is incorrect. The MSB at the DAC input has a jitter of half the clock
>period, because it can only change state at a clock transition. The
>reconstruction process of D/A conversion and requantizing lowers the jitter
>at the limiter output by (on the order of) 6 dB per bit of D/A resolution.
>This is because there is a time interpolation effect that allows the limiter
>to change state in units of 1/2^n fractions of a clock period.

>This topic is a very common source of misconceptions about DDS.

>Rick Karlquist N6RK
>rkarlqu@scd.hp.com

Play with it a bit. The MSB alone jitter is much more than one clock period.
It'd drive a scope crazy. <^_->
<^_^>

1399. Re: VCO schematic 430MHz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:47:20 UTC
From: bens@mdhost.cse.tek.com
Message-ID: <2t2mco$7j7@tekadm1.cse.tek.com>
Source record: 117486

In article <CqsG7M.o15@risc1.rug.nl>, anko@chem.rug.nl (Anko Westers) writes:
|> ...
|> I'm looking for a good (ie. working) schematic for a VCO ranging from
|> approx 430 MHz up till 500 MHz (70 cm amateur band). Maybe someone can
|> post or mail me an example how to do this. The exact specs are not
|> that important, just the idea how to build the thing.
|>

Hello Anko,

My favorite osc. from HF to UHF range is the Clapp (like a Colpitts but with varactor added in series with the inductor to ground) as shown, among other places, in U. Rhode's book "Digital PLL Frequency Synthesizers", Prentice Hall, 1983. To get "Stable" (!) operation, insert a base resistor and an Emitter resistor (about 22 ohm, both) before connecting C1. For 430-500 MHz, I would use NEC's NE68033 (or its siblings in other packages) or the Motorola MMBR571 (or other packages in the family). C1 (between Base and Emitter) 15pF, C2 about 12pF, L can be 3 turns of #26 AWG with 0.1 inch air core (please excuse me for the US units). For varactors I'll use a pair of MV2102 back to back.

Bias the varactors' common Anode with a 1 uH choke and 100p bypass. connect one Cathode directly to ground and then DC ground the other end through the tank's L and then a parallel combination of 1 uH and a 560 ohm resistor. The parallel resistor is needed to de-Q the spurious resonances. The transistor's Base now sits at DC ground, so we'll need a positive Collector supply (5-8V) and a negative Emitter supply (say -6V through a 330 ohm resistor). If you need more tuning range, then either use Frequency Sources KV3201 or four MV105 connected back to back with bias chokes. After all these messy descriptions, you probably still not getting the picture. So just email me if you can use a schematic in Postscript.

Good luck!

Benjamin
yauwah.sam@tek.com

1400. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 20:52:57 UTC
From: jbloom@arrl.org
Message-ID: <1994Jun7.205257.20068@arrl.org>
Source record: 117496

Darren Leigh (dlleigh@frank.harvard.edu) wrote:
: I've been reading Ulrich Rohde's article in the June issue of QST. In
: figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
: a DAC, which gets filtered and then hard limited. This hard limited
: signal (a square wave) is then used as an input to the PLL.

: My question is: what's the DAC for? Why not just drive the PLL with the
: MSB of the DDS. It's seems like a waste to make a nice filtered analog
: signal from the DDS output and then just make a square wave again.

: My guess is that is has something to do with decreasing phase noise, but
: I don't see how it does that. Does anyone have any ideas?

Let me see if I can explain it. The concern here is quantization
noise. Consider a sampled sine wave signal, say a 1.1 MHz signal
sampled at a 4-MHz rate. The sample values would be:

x(k) = sin(2*pi*k*1.1/4)
so,
x(0) = 0
x(1) = 0.987688341
x(2) = -0.309016994
x(3) = -0.891006524
x(4) = 0.587785252
and so on.
Actually, there are more digits to the right of the ones shown: an
infinite number of digits, in fact. But any DAC can have only a finite
number of bits, so for each value shown above, the DAC can output only
an approximation of the desired value. So, the DAC is usually going to
be outputting a voltage slightly different from the correct one. This
difference, or error, is noise. (In the case of a DDS, the noise shows
up not as random "white" noise, but at discrete frequencies--spurs.)
The larger the difference between the correct sample value and the
value the DAC has to output, the more noise. And this is controlled by
the number of bits of the DAC.
So, if we remove the DAC and just use the MSB of the DDS, we'll have
huge errors for most of the output samples, which will show up as huge
spurs. For example, thge samples above would have to be:

x(0) = 1
x(1) = 1
x(2) = -1
x(3) = -1
x(4) = 1

(Counting any sample with the MSB = 0 as a 1 voltage and any sample with MSB = 1 as a -1.) Not a good thing; the error (noise) is as large as the signal! And you can't count on the bandpass filter to remove the spurs generated this way, since some of them may occur close in frequency to the output signal.
Hope that helps.
--
Jon Bloom KE3Z jbloom@arrl.org

1401. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 21:10:01 UTC
From: kirkland@bnr.ca
Message-ID: <2t2nn9$a7@bmerha64.bnr.ca>
Source record: 117484

From Stanford Telecom's book on DDS

A frequently asked question is this: The output of the NCO is
a digitized sinewave and the most significant bit (MSB) is the
sign of the signal. So can't I just use this signal when I only
want to generate a squarewave...

The answer is yeas and no: it all depends on the jitter that can
be tolerated on the square waver. Where does this jitter come from?
To answer this it is necessary to recall that the output of the NCO
is a sampled data signal, not a continuous time signal, since the output
of the NCO can only change at the edges of the clock. The MSB is
a replica of what would be obtained at the output of the clipper if the
low pass filter were omitted. When the output frequency fo is an even
submultiple of the clock frequency ... (no problem)
...
However, consider the case where the fo/fclk = 1/7.5. This is shown in
Fig. 3 (sorry can't draw this in).
In this case the sinewave starts at zero degrees and the first rising
edge of the MSB coincides with this zero crossing of the sinewave. The
second zero crossing occurs after 3.75 clock cycles and the MSB changes
after 4 cycles; the third zero crossing occurs after 7.5 clock cycles and
the MSB changes after 8 cycles; the fourth zero crossing occurs after 11.25
clock cycles and the MSB changes after 12 cycles; the fifth zero crossing
occurs after 15 clock cycles and the MSB will change simultaneously. What
has happened is that the MSB of the NCO has
generated two cycles of a rectangular wave, the first with a period of 8 clock
cycles and the second with a period of 7 cycles. This process repeats, so that
the mean period
of the signal is correct, 7.5 clock cycles, but with a jitter of plus or minus
a half cycle since the periods are actually alternately 8 and 7 cycles.

...
when the ratio between fo and fclk is more complex is that the statistics
of the jitter change; the peak-to-peak value of the jitter will always be
one clock cycle, but the RMS value will vary and so will the spectrum of the
signal.

...
The reason why a jitter-free signal is obtained when the sinewave from the
DAC is clipped after filtering is that the aliases of the signal are
removed before the harmonics are generated, and consequently the aliases of the
harmonics are never generated in the first place.

From Stanford Telecom's Application note 111

Bill Kirkland

1402. Re: Converting the Radio Shack 5ch 49MHz ht to

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 21:29:31 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Jun7.212931.9936@ttinews.tti.com>
Source record: 117488

In article <2t2k2d$c2v@abyss.West.Sun.COM> myers@spot.West.Sun.COM writes:

Hi Dana! Dennis (KB6LUZ) and I did a few of these over a boring weekend,
he's running a pair as a remote to his HF rig...pretty slick, eh?

>
>Slow down, Erik. Changing the 10.24 Mhz crystal also changes the
>channel spacing. This could make it difficult to interoperate with
>other synthesized radios on 5kHz channels, since you'll be on 5.774Khz
>channels (for example).

Nah...doesnt seem to. We used my ft726r as the base reference for all
the tuneup stuff and you do hafta tweek those cans a bit. As for the
question of compatibility, heh, I betcha there's a few million of
these rigs out there, just waiting to be moved to 6m!

>
>The other little detail you're leaving out is that the 10.24 MHz rock
>is used to provide the 2nd mixer injection. Changing this rock
>changes the 2nd IF. Oops, now you have to change the 2nd IF filter.
>Not necessarily practical.

sure does, but after alignment the result is the same.>

>You *are* referring to the 5 channel radio, catalog #21-402, right?

Yep. The pll 5 channel version. With the ptt that enables the pll!
(note: hidden techtip, a kludge way of doing splits)

>
>> Therefore, find a xtal at or near 10.24 MHz - this will give you
>>operation from 50.610 MHz in 15KHz steps. You might also want to
>>reduce the size of the final transistor's bias resistor, 8-10Kohms
>>seems to increase the power out greatly..like 450mW or so, but the
>>battery life is dramatically foreshortened! Peak and tweek as needed.
>
>Oops. Never mind that the T/R switch is non-existant, that, even if
>you change the "PA" bias and actually get 450mW (where'd this number
>come from? Experimental results?) that the front end isn't designed
>to cope with 13V p-p (that's 450mW in 50ohms). Are you talking about
>the TRC-503 radio?
>
We guessed at the number based on battery consumption and field strength
nd BTW we ended up changing the antenna to the one the 6m Club recommends
for the TRC505, a bit longer - try it! It works!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

1403. CORRECTION! RS 49MHz to 6m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-07 22:22:19 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Jun7.222219.11120@ttinews.tti.com>
Source record: 117489

Please note that the existing xtal in the RS 5ch 49MHz unit is 10.24 MHz! Substitute a 10.4 MHz xtal (its a common xtal used in many vdt and vtac circuits - $1 at most surplus type places.) in it's place and your little ht will have 5 channels starting from 50.610 MHz with 15 KHz spacing.

You will have to tune the cans and the final for peak output, but the adjustment is very slight. You might also be able to push the freq a little with a different freq xtal, we tried a 10.7 and found it to be beyond the tuning range of the cans. So try a 10.45 or 10.5, maybe even a 10.6 MHz would work.

The easist way to do this mod is to do a pair and tune them together, this is what KB6LUZ, Dennis and I did on our initial pair. Thereafter we used my FT726r and his Yaesu 6m rig to do the tuneups. A longer telescopic antenna helps the range, we picked a pair of 4 section antennas at RS. These stick out from the top of the ht about 3-4" but are the same base diameter as the ones supplied with the ht for 49 MHz use. I think they are 26" as opposed to 18" long. Whatever antenna you decide to use, tune the final to it using a field strength meter to guide you.

73! Sorry for the mixup on the xtal freq!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

1404. Re: RADIO-TO-TELEPHONE INTERCONNECT CIRCUIT?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 00:49:43 UTC
From: sct@po.cwru.edu
Message-ID: <2t34j7$1n2@usenet.INS.CWRU.Edu>
Source record: 117491

In article <1994Jun7.135656.1@aa.wl.com>,
NONE <pennind@aa.wl.com> wrote:
> CAN ANYONE DIRECT ME ON HOW TO FIND A CIRCUIT THAT WILL INTERCONNECT MY BASE
> STATION TO THE TELEPHONE AND ALLOW ME TO MAKE AUTOPATCHES WITH MY HT...

THE ARRL HANDBOOK HAS A CHAPTER THAT DISCUSSES HOW PHONE PATCHES OPERATE.
IT IS QUITE INTERESTING, AND INCLUDES SOME INFORMATION ON A BASIC, MANUALLY
OPERATED PHONE PATCH.

An autopatch is a more complicated beast and would take a lot of work to
build. You are probably better off buying a commercially made autopatch,
or simpler yet, join a local repeater club that has an autopatch on their
machine.

If you decide to set up your own autopatch, make sure you take care of
compliance with the FCC rules. The issues (particularly control issues)
get complicated fast when dealing with autopatches.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1405. Re: Help indentify 2SC2694

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 00:53:36 UTC
From: mjsilva@ted.win.net
Message-ID: <298@ted.win.net>
Source record: 117497

In article <2t0oi4$hf4@aggedor.rmit.EDU.AU>, david@pitvax.xx.rmit.edu.au (david@pitvax.xx.rmit.edu.au) writes:
>I've had a pair of RF power transistors in the junk box for some
>time now, and thought I'd enqire as to what they are, in case it
>spurs me to do something with them!
>
>They are 2SC2694, and have the three diamonds in a circle symbol on
>them which I believe is Mitsubishi.

My Motorola RF book says these are direct equivalents to their MRF247.

These are rated at 75 watts out at 175 MHz (12 volt supply). Gain is 7.0 db min.

Let us know how your new 2m amplifier works out!

Mike, KK6GM

1406. Re: PCB via Laserjet

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 02:55:35 UTC
From: david@pitvax.xx.rmit.edu.au
Message-ID: <2t3bs2$7jn@aggedor.rmit.EDU.AU>
Source record: 117492

In Article <2t0hf2INN6qd@sepia.wv.tek.com>
edbu@sepia.wv.tek.com (Ed Burress) writes:

Fascinating notes about making PCB's from a Laser Printer image deleted

I am pleased to see that you are using a real computer for your PCB layout work! ;-)

I prefer Macs as well, and am wondering if you know of a library of MacDraw graphics for IC pads etc.?

Regards David

1407. Re: CORRECTION! RS 49MHz to 6m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 03:00:12 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2t3c7s$c2v@abyss.West.Sun.COM>
Source record: 117493

In article 11120@ttinews.tti.com, sorgatz@avatar.tti.com (Erik Sorgatz) writes:
> Please note that the existing xtal in the RS 5ch 49MHz unit
>is 10.24 MHz! Substitute a 10.4 MHz xtal (its a common xtal
>used in many vdt and vtac circuits - $1 at most surplus type
>places.) in it's place and your little ht will have 5 channels
>starting from 50.610 MHz with 15 KHz spacing.

I thought so; I calculated 10.4 MHz to move from 49.85MHz to 50.61MHz.
The channel spacing 15.23 KHz, close enough for most radios.

However, this means your second mixer injection is now 10.4 MHz, not
10.24 Mhz. This change is probably narrow enough to remain inside
the passband of your first IF filter (a ceramic 10.7MHz jobby maybe
as much as 300KHz wide), but means your radio is going to be most
sensitive to signals 160Khz away from where you expect. In fact,
I'd expect the receiver to be rather deaf at the expected receive
frequency, since the 2nd IF filter is pretty narrow (< 30kHz).

In the absence of an on-frequency signal, there's probably enough
signal leaking through the 2nd IF filter to demodulate the signal,
but the sensitivity has to be poor. Do you retune the quad
detector coil (L107), too? I'll bet that makes the audio sound better,
but it won't make the radio any more sensitive.

The L7250 Sanyo synth chip uses ROM lookup tables to determine
frequency, so compensating for the oddball offset of 160KHz in
the IF response isn't easy. What did you do about this?

> You will have to tune the cans and the final for peak output,
>but the adjustment is very slight. You might also be able to
>push the freq a little with a different freq xtal, we tried a
>10.7 and found it to be beyond the tuning range of the cans. So
>try a 10.45 or 10.5, maybe even a 10.6 MHz would work.

Yeah, but unless I'm mistaken, you're going to run into the 2nd
LO issue, too. Even worse.

> The easist way to do this mod is to do a pair and tune them
>together, this is what KB6LUZ, Dennis and I did on our initial
>pair. Thereafter we used my FT726r and his Yaesu 6m rig to do
>the tuneups. A longer telescopic antenna helps the range, we
>picked a pair of 4 section antennas at RS. These stick out from
>the top of the ht about 3-4" but are the same base diameter
>as the ones supplied with the ht for 49 MHz use. I think they
>are 26" as opposed to 18" long. Whatever antenna you decide to
>use, tune the final to it using a field strength meter to guide

>you.

I'd be interested in hearing the results of a sensitivity check on
the receiver; Erik, you know where to get access to a service monitor?
Let me know if I can help...

73

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1408. Re: 900mhz transciever

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 03:47:00 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2t3evk$med@nntp2.Stanford.EDU>
Source record: 117494

In article <2t12r5$gpm@usenet.INS.CWRU.Edu> au440@cleveland.Freenet.Edu (Kieran Donahue) writes:
>
> How would I build a snythesized 900 mhz transciever? I
>want to build a separate unit for contesting. Are there any
>good recipies that someone could recommend or acquire for me?
>--
>Kieran D. au440

I think the mose economical thing to do would be to make a transverter rather than a complete transceiver. You could use an HF or 2M all mode rig as the IF.

I seem to recall, back when we first got use of the band, several designs appearing in places like QEX and the now defunct Ham Radio Magazine.

Steve Muther WF6R

1409. Optoisolators Used to key radio.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 15:41:35 UTC
From: Waltk@pica.army.mil
Message-ID: <9406081141.aa05902@COR5.PICA.ARMY.MIL>
Source record: 117498

Howdy,

I am interested in building an opto-isolated interface between a PC
and a radio. I want to be able to key the transmitter via the LPT
port, such as done by many logging programs. Specifically, I want
to eliminate RF-feedback problems that occur when operating at
high (1.5Kw) power levels.

Can someone suggest a circuit and/or specific device (part#) to accomplish
the above task.
Thanx & 73,
Walt - K2WK
.....
73 de Walt Kornienko - K2WK Frankford Radio Club
Internet: waltk@pica.arm.mil Snail: RR1 Box 919, Lafayette, NJ 07848
DX PacketCluster: K2WK > W3MM Packet: K2WK@NX2P.NJ.USA.NA

1410. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-08 20:50:51 UTC
From: bens@mdhost.cse.tek.com
Message-ID: <2t5avb$1sj@tekadm1.cse.tek.com>
Source record: 117499

In article <1994Jun4.143517.32939@husc14.harvard.edu>, dlleigh@frank.harvard.edu (Darren Leigh) writes:
|> I've been reading Ulrich Rohde's article in the June issue of QST. In
|> figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
|> a DAC, which gets filtered and then hard limited. This hard limited
|> signal (a square wave) is then used as an input to the PLL.
|>
|> My question is: what's the DAC for? Why not just drive the PLL with the
|> MSB of the DDS. It's seems like a waste to make a nice filtered analog
> signal from the DDS output and then just make a square wave again.

The DDS works by keeping track of the number of Reference clock pulses required to generate a cycle of the output frequency. Quite often this is not an integer, and the Accumulator overflows at different intervals to give you an average frequency that matches what you want.

If only the MSB of the phase accumulator is used then the edge of your output signal is jumping back and forth to give you this average frequency. The DAC with the Sine table has an interpolation effect to give you less jitter (a deterministic form of phase noise), as additional information about the correct zero-crossing time is embedded in the other bits of the accumulator. As a result the edge jumping is reduced to some small percentage determined by the phase-quantization (how many points along a cycle do you have entries in the table) and DAC resolution (how many different levels between + and - peaks of the sine wave). Now you can sense the zero crossings and recreate a square wave with a much more stable edge.

Benjamin Sam
yauwah.sam@tek.com

1411. Re: What's the DAC for?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 00:13:27 UTC
From: tomb@lsid.hp.com
Message-ID: <Cr3sMF.12n@hpcvsnz.cv.hp.com>
Source record: 117500

Darren Leigh (dlleigh@frank.harvard.edu) wrote:
: I've been reading Ulrich Rohde's article in the June issue of QST. In
: figure 14 he shows a block diagram for a DDS-driven PLL. The DDS feeds
: a DAC, which gets filtered and then hard limited. This hard limited
: signal (a square wave) is then used as an input to the PLL.

: My question is: what's the DAC for? Why not just drive the PLL with the
: MSB of the DDS. It's seems like a waste to make a nice filtered analog
: signal from the DDS output and then just make a square wave again.

: My guess is that is has something to do with decreasing phase noise, but
: I don't see how it does that. Does anyone have any ideas?

I think this question has been answered plenty well enough by other
posters, but to extend the thought, have a look at "Reducing Spurious
Output of NCO's" on page 48 of June 1994 NASA Tech Briefs. The
article talks about a (NASA-patented) technique for adding dithering
to an NCO (DDS system) to reduce the level of the spurs.

1412. Re: CORRECTION! RS 49MHz to 6m

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 02:21:26 UTC
From: sct@po.cwru.edu
Message-ID: <2t5ub6$ivb@usenet.INS.CWRU.Edu>
Source record: 117501

In article <2t3c7s$c2v@abyss.West.Sun.COM>,
Dana Myers <myers@spot.West.Sun.COM> wrote:
> However, this means your second mixer injection is now 10.4 MHz, not
> 10.24 Mhz.

Would it be practical to add a 10.4 MHz oscillator for the PLL but
retain the 10.24 MHz oscillator for the second mixer? Sorry, I don't
have the schematic, so I can't see whether this is reasonable.

How about leaving the 10.24 MHz crystal in place, but use a mixer (NE602?)
and filter to move the 49 MHz PLL output into the 50 MHz band? I suppose
that enough filtering to avoid ~46 MHz spurious emissions would be more
work and bulk than is worthwhile for the rig.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1413. Make a simple scanner?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 08:55:07 UTC
From: erik@fishtank.equinox.gen.nz
Message-ID: <771152107.18snx@fishtank.equinox.gen.nz>
Source record: 117505

Would anybody have any plans on how to build a *REALLY* simple scanner.
Freq range is not important really, as long as it gets something
different. And ideas/suggestions appreciated..

Cheers..

1414. ** FLEA at MIT ** Sunday 19 June Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 09:40:34 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <2t6o2i$ldb@senator-bedfellow.MIT.EDU>
Source record: 117502
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

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****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

1415. PCB layout software for Mac?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 19:31:44 UTC
From: bsn@hagar.ph.utexas.edu
Message-ID: <2t7qn0$2aq@geraldo.cc.utexas.edu>
Source record: 117503

Does anyone know of circuit board layout software for the Mac. Either commercial, shareware or freeware.

Thanks,

Barry W5KH

1416. VHF/UHF amp projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 19:39:47 UTC
From: lent@vulcan.mcs.anl.gov
Message-ID: <7711907876328@vulcan.mcs.anl.gov>
Source record: 117504

I need more power for my 2M/70cm radios and am looking at trying to build
some amplifiers. I need something somewhere in the 5win -> >100w out.
FM and SSB. I have tried the ramsey amp and it doesn't provide enough
power to hit the repeater (we are in the mountians) Is there an art
to building amps, or is it pretty straight forward? Could I take something
like the ramsey amp and put a heftyer chip and heatsink to get more
output? Is there some basic schematic that one can build off of?
What kind of things does a newbie amp builder need to know?
73
kc4zqg

lent@mcs.anl.gov

1417. Re: PCB layout software for Mac?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-09 20:58:03 UTC
From: kgk@nwu.edu
Message-ID: <kgk-090694155414@kgkmac.repoc.nwu.edu>
Source record: 117506

In article <2t7qn0$2aq@geraldo.cc.utexas.edu>, bsn@hagar.ph.utexas.edu ()
wrote:

> Does anyone know of circuit board layout software for the Mac. Either
> commercial, shareware or freeware.
>
> Thanks,
>
> Barry W5KH

Barry

There are two that I know of, Vamp Inc has McCad EDS and Douglass
Electronics also has a system for the Mac. Both offer Schematic Capture,
PCB Layout and Autorouting among other features. I don't have any real
experience with either one, but I believe they will send you a demo disk.

Address:

Vamp Inc.
6753 Selma Ave.
Los Angeles, CA 90028
(213) 466-5533

and

Douglas Electronics Inc.
2777 Alvarado St.
San Leandro, CA 94577
(510) 483-8770

Hope this helps.

Regards

Ken

-- _--
Kenneth Kalan PP ASEL ===_ / |
Northwestern University | ___/[__] ___/__ |
Prosthetics Research Laboratory |__ _|___|_____===/
Rehabilitation Engineering Program | \/
kgk@nwu.edu o O

1418. Re: PCB layout software for Mac?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 07:29:38 UTC
From: n1gak@netcom.com
Message-ID: <n1gakCr67HE.yK@netcom.com>
Source record: 117508

In article <kgk-090694155414@kgkmac.repoc.nwu.edu>,
Kenneth Kalan <kgk@nwu.edu> wrote:
>In article <2t7qn0$2aq@geraldo.cc.utexas.edu>, bsn@hagar.ph.utexas.edu ()
>wrote:
>
>> Does anyone know of circuit board layout software for the Mac. Either
>> commercial, shareware or freeware.
>>
>> Thanks,
>>
>> Barry W5KH
>
>Barry
>
>There are two that I know of, Vamp Inc has McCad EDS and Douglass
>Electronics also has a system for the Mac. Both offer Schematic Capture,
>PCB Layout and Autorouting among other features. I don't have any real
>experience with either one, but I believe they will send you a demo disk.
>
>Address:
>
>Vamp Inc.
>6753 Selma Ave.
>Los Angeles, CA 90028
>(213) 466-5533
>
>and
>
>Douglas Electronics Inc.
>2777 Alvarado St.
>San Leandro, CA 94577
>(510) 483-8770
>
>Hope this helps.
>
>Regards
>
>Ken
>-- _--
>Kenneth Kalan PP ASEL ===_ / |
>Northwestern University | ___/[__] ___/__ |
>Prosthetics Research Laboratory |__ _|___|_____===/
>Rehabilitation Engineering Program | \/
>kgk@nwu.edu o O

>---

I've used both of these packages >VERY< extensively ...

Douglas: Cheaper. Less featureful. I kinda prefer the layout tools in Douglas if I'm going to do totally-by-hand merely using the computer instead of tape & mylar. The schematic capture was good. The autorouter bites. Poor use of color. (I have to admit: I was using a somewhat ancient version)

McCad: I use this almost exclusively now. I don't like the schem capture as much as Douglas' (Douglas does bussing much better) but I just LOVE the layout stuff. It was MUCH more intuitive than Dogulas, and dealt with multi-layer more gracefully. It was much more expensive ($10K). I also had to build quite a few devices for the schem capture that I thought should have come with it (they did in Douglas). Good use of color.

If you're only going to do 2-layer boards, and don't mind the lame autorouter, go with Douglas.

If you're going to do serious layouts, (like for money) spend the bucks and get VAMPs.

Douglas had no copy protection.

VAMP used scarred-disk, but you could install 3 copies, or use the master copy as a key-disk, and it came with 2 copies of every disk.

Scott

1419. Wide Range Freq. Descriminator circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 08:37:09 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Jun10043709@splinter.coe.neu.edu>
Source record: 117509

Hi:
Does anyone have a simple circuit for a wide range freq. descriminator?
Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
-Dean

1420. PCB layout software for PC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 12:15:10 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <Cr6KpB.9G5@news.ess.harris.com>
Source record: 117510

Hello All -

For a while now, I have been making PC boards using magazine
artwork and the toner method. Now I want to make my own artwork
from a schematic. Any advice on software that will fit the bill?

Operating Environment:
1. This is a hobby effort, so cost has to be kept low
2. The boards will all be one layer, on single sided board.
3. The software can be DOS or windows-based.

Thanks. I'd like to make artwork (then boards) for some of the projects
described in "Solid State Design for the Radio Amateur".

73, gary n2jgu
gmd@rfc.comm.harris.com

1421. Re: VHF/UHF amp projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 13:14:00 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun10.131400.22460@ke4zv.atl.ga.us>
Source record: 117513

In article <7711907876328@vulcan.mcs.anl.gov> lent@vulcan.mcs.anl.gov (George E. Lent) writes:
>I need more power for my 2M/70cm radios and am looking at trying to build
>some amplifiers. I need something somewhere in the 5win -> >100w out.
>FM and SSB. I have tried the ramsey amp and it doesn't provide enough
>power to hit the repeater (we are in the mountians) Is there an art
>to building amps, or is it pretty straight forward? Could I take something
>like the ramsey amp and put a heftyer chip and heatsink to get more
>output? Is there some basic schematic that one can build off of?
>What kind of things does a newbie amp builder need to know?

A stable clean amp can be tricky at VHF/UHF, especially one with a lot of power gain per stage. If you plan to run it off 12 volts, the output impedance of the amp becomes very low as power is increased, so the matching network design becomes more critical. Tank losses can eat you alive. You'll likely be using push pull stages with single turns of silver plated heavy copper tubing as the primary with multiple turns of teflon coated line passing *through* the tubing for the secondary. You can't just substitute a heavier transistor in an existing circuit, you have to redesign the output network. You may have to redesign the input network too, but that's fairly trivial if you have several watts of drive. You can use heavy swamping for stability.

The easiest approach, however, is to do what the Japanese do in their newer mobile radios, use a hybrid power brick. These are designed to be 50 ohms in and out so matching becomes easy, and simple halfwave filters can control harmonics. They're also unconditionally stable in most cases, especially into reasonable SWR loads. However, most of these bricks only go up to about 50 watts. To get a 100 watt amp you'll need to combine two of them. A Wilkinson combiner will work.

Building medium and high power VHF/UHF amplifiers is not a good first project. Details matter in construction of these amplifiers in order to get good gain, efficiency, and stability. Construction or design errors that don't matter much at HF, or at low power, can quickly fry expensive devices. Another name for a high gain VHF/UHF power amplifier is often *oscillator*. I strongly suggest going with a proven design and following the layout to the letter until you get more experience working with these beasts.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary

534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1422. Re: VHF/UHF amp projects

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 15:08:48 UTC
From: ve8ev@gov.nt.ca
Message-ID: <1994Jun10.150848.21988@gov.nt.ca>
Source record: 117511

In article <7711907876328@vulcan.mcs.anl.gov> lent@vulcan.mcs.anl.gov (George E. Lent) writes:
>I need more power for my 2M/70cm radios and am looking at trying to build
>some amplifiers. I need something somewhere in the 5win -> >100w out.
>FM and SSB. I have tried the ramsey amp and it doesn't provide enough
>power to hit the repeater (we are in the mountians) Is there an art
>to building amps, or is it pretty straight forward? Could I take something
>like the ramsey amp and put a heftyer chip and heatsink to get more
>output? Is there some basic schematic that one can build off of?
>What kind of things does a newbie amp builder need to know?
>73
>kc4zqg
>
>lent@mcs.anl.gov
>

When comparing dollars per decibel your best bet is always to put up
the best antenna you can muster. That being said, though, amplifiers
are good beginner projects and will add a bit more oomph to your
signal. You're on the right track with the Ramsey kit. Also check
out Hamtronics and Communications Concepts (among others I'm sure).
Schematics and PCB layouts can be found in the ARRL Handbook.
Switching from a 1/4 wave ground plane to a 9 element yagi/quagi/quad
will give many times more gain than an amplifier, though.
Good luck!
==========
John Boudreau VE8EV INTERNET: ve8ev@amsat.org
Inuvik, NWT, CANADA PACKET: VE8EV@KL7GNG.#NAK.AK.USA.NA
==========

1423. Re: Wide Range Freq. Descriminator circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 16:26:23 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2ta47f$mpd@hpscit.sc.hp.com>
Source record: 117512

In article <DEAN.94Jun10043709@splinter.coe.neu.edu>,
Dean Gelabert <dean@splinter.coe.northeastern.edu> wrote:
>Hi:
> Does anyone have a simple circuit for a wide range freq. descriminator?
>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
>-Dean

Use an MC10E016 to divide by 256, then use an MC10ELT21 to convert from ECL
to TTL, and then use a 74LS109 dual flip flop to divide by 4. You now have
a range of about 30 kHz. to 1 MHz. Use a frequency-to-voltage converter
as a discriminator on this signal. Analog Devices makes some
good F/V converters.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1424. cb antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 18:38:06 UTC
From: foral@cae.wisc.edu
Message-ID: <2tabue$fs7@news.doit.wisc.edu>
Source record: 117514

I hope some one can help with my questions:

In my car, I want to use the AM/FM antenna for my cb. I know I will have to attach the shield of the cb coax to the veh. My questions are:

Will this work (I am not looking for an great antenna, just one that would work when needed)?

Where should I attach the sheild (to the frame, body, or doesn't matter)?

I don't use the cd very often and don't want to permenately attach a cb antenna, nor do I want to use an magnetic mount. If you can help or if you know of an antenna that I might use, conntact me at:

foral@cae.wisc.edu

Thanks

Jim

1425. Re: PCB layout software for PC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-10 18:38:39 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun10.183839.23927@ke4zv.atl.ga.us>
Source record: 117516

In article <Cr6KpB.9G5@news.ess.harris.com> gdian22@rfc.comm.harris.com (Gary M Diana) writes:
>Hello All -
>
> For a while now, I have been making PC boards using magazine
>artwork and the toner method. Now I want to make my own artwork
>from a schematic. Any advice on software that will fit the bill?
>
> Operating Environment:
> 1. This is a hobby effort, so cost has to be kept low
> 2. The boards will all be one layer, on single sided board.
> 3. The software can be DOS or windows-based.
>
>Thanks. I'd like to make artwork (then boards) for some of the projects
>described in "Solid State Design for the Radio Amateur".

I've used a DOS layout program called PCBoards, $50. There's an optional schematic capture program called SuperCad, and an autorouter called PCRoute. The latter two are $99 each. The programs are mouse aware, but can operate without one. EGA required, VGA preferred. The layout program is strictly snap to grid, but that's not a serious limitation for most things. It has good parts libraries, and you can make your own and add them to the library. There are drivers for plotters and laser printers as well as Epson dot matrix support.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1426. Re: Help indentify 2SC2694

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-11 01:21:55 UTC
From: at091@FreeNet.Carleton.CA
Message-ID: <Cr7L4J.MK1@freenet.carleton.ca>
Source record: 117515

hello david my name is jake ve2tqx
the transistors are listed in ecg catalog there description are

t-npn si rf po 136-174mhz 80watts case t60

bv cbo 36 bv ceo 18 bv ebo 4 max coll current 20 amps max diss watts 250

current gain hfe 35 typ case rf-50f6 package t60

any cross reference book ecg philips nte any of them can be bought from tv
parts distributor

73's hope this helps jake ve2tqx at091

1427. Super Sensitive FSM Circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-11 12:30:24 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Jun11083024@splinter.coe.neu.edu>
Source record: 117517

Hi:
Does anyone have a circuit for a super-sensitive field strength
meter? Something w/ an amp that can sniff RF for miles! Thanks for your
help.

-Dean

1428. Re: Super Sensitive FSM Circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-11 18:57:22 UTC
From: mjsilva@ted.win.net
Message-ID: <311@ted.win.net>
Source record: 117619

In article <DEAN.94Jun11083024@splinter.coe.neu.edu>, Dean Gelabert (dean@splinter.coe.neu.edu) writes:
>Hi:
> Does anyone have a circuit for a super-sensitive field strength
>meter? Something w/ an amp that can sniff RF for miles! Thanks for your
>help.
>

You mean a receiver? But seriously, when you have that much sensitivity, you really do need some kind of frequency selectivity or you'll never be sure if the RF on the meter is the RF you're trying to "sniff." Tell us what you want it for and maybe we can be more helpful.

Mike, KK6GM

1429. Re: Super Sensitive FSM Circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-11 21:47:52 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <2tdbe8$a2q@nntp2.Stanford.EDU>
Source record: 117620

In article <DEAN.94Jun11083024@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:
>Hi:
> Does anyone have a circuit for a super-sensitive field strength
>meter? Something w/ an amp that can sniff RF for miles! Thanks for your
>help.
>
>-Dean

Unfortunately, the kind of field strength meter you are talking about would, in addition to the amplifier, need a great deal of selectivity such that it did not respond to undesired local transmitters or more powerfull distant ones. It sounds like what you really need is a small receiver with an S-Meter. At least, the complexity would be about the same.

Steve Muther WF6R

stevem@w6yx.stanford.edu (Stanford Univ. ARC)
steve_muther@3mail.3com.com (3Com Corp.)

1430. Re: PCB layout software for PC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-11 22:47:39 UTC
From: haymoree@newt.ee.byu.edu
Message-ID: <2tdeub$sec@bones.et.byu.edu>
Source record: 117621

Gary M Diana (gdian22@rfc.comm.harris.com) wrote:
| For a while now, I have been making PC boards using magazine
| artwork and the toner method. Now I want to make my own artwork
| from a schematic. Any advice on software that will fit the bill?

| Operating Environment:
| 1. This is a hobby effort, so cost has to be kept low
| 2. The boards will all be one layer, on single sided board.
| 3. The software can be DOS or windows-based.

There's a fully functional (although of limited capability; I've
forgotten what the limits are) demo of PADS available. I haven't
figured out how to do auto placing and/or auto routing from a schematic
yet, but manual placement and routing seems to work well.

--
Ed Haymore | AA6EJ
ed@byu.edu | Es perillos abocar-se.

1431. Re: PCB layout software for Mac?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 00:12:12 UTC
From: kfa@hugo.hut.fi
Message-ID: <KFA.94Jun12001212@hugo.hut.fi>
Source record: 117618
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

##follow-up directed to sci.electronics##

I have used (not very heavily) Vamp Inc. McCad PCB-1 Design v. 4.02 and
I just got Douglas CAD/CAM Extended Layout 7.0 and do not have yet much
experience with it. Both programs are priced around $400 - $500, depending
on options.

NOTE: These are the non-professional packages. I'm not in a position to
easily spend thousands of $$ for a professional package. I just want a
reliable and easy-to-use basic PCB design program for our electronic
workshop prototype production. Both Douglas and Vamp Inc. do have
nice professional packages.

Some info on the non-professional programs:

****
Program: Douglas CAD/CAM Extended Layout 7.0 (06-Jul-92),
Print 7.0
Pen Plot 7.20 (separate product)
$395 (layout), add $125 for pen plot option

Douglas Electronics Inc.
2777 Alvarado St.
San Leandro, CA 94577
(510) 483-8770

grid size: 0.001 - 1.000 inch. Display scaling 20% to 1000%
line width: 0.001 - 0.250 inch.
pad size: 0.001 - 0.250 inch (size, hole size and shape adjustable)
hole size: 0.020 - 0.250 inch

All sizes are adjustable in steps of 0.001 inch.

Templates:

There are no ready-made IC or SMT component templates. For that purpose
you will have to build your own patterns and pads. Not a big problem, unless
you mix lots of different DIL and surface-mount components on the same
circuit.

Layers:

Component side and solder side. One or both can be visible at the same time.
- Text can be placed only on component side.

+ Customization is possible.
The basic elements are lines (rounded ends), holes and squares. A zero

length lines is a round pad. You can have a set of 7 lines, 7 squares,
7 holes, 35 pads and 35 patterns. A pad or a pattern is anything you
can create from lines, holes, squares, other pads and other patterns.

- There is no way of copying or pasting stuff from one drawing to
another one (unless you use a copy of the first one as a template).

Reliability:

I haven't used the program enough to comment on reliability.

****
Program: McCad PCB-1 Design v. 4.02 (31-May-93)
$400 - $500 for the program, pen plotter support built-in

Vamp Inc.
6753 Selma Ave.
Los Angeles, CA 90028
(213) 466-5533

grid size: 10, 20, 25, 50, 100, 125, 150, 156, 200 and 250 mils
auto-grid can be switched off.
line width: 0.007 - 0.5 inch, a set of 22 widths
pad size: 0.030 - 0.5 inch, a set of 22 pad sizes
available pad shapes are round, square, rectangular (2:1)
and elliptical (2:1).
hole size: 0.012 - 0.500, a predefined set of 22 sizes ("zero" included)

Templates: DIL for normal and surface-mounted IC:s
16 - 58 pin LCC and 28 - 56 mini flat pack SMT components
DB-9, DB-15, DB-25, DB-37 connectors
"Lines" - fill area with lines spaced at 1 grid unit
"pads" - fill area with pads placed at every grid point

Layers:

There are 9 different layers (top silk, top, top pads, inner-1, inner2,
common, bottom silk, bottom pads, bottom) and you can set the visibility
and drawing colors for each layer separately. You can also specify
multiple layers to be printed in the same printer/plotter image.

- Not customizable. Fortunately the template selection is quite large.

+ Copying and pasting between drawings is possible in McCad PCB.

Reliability:

- I have found the McCad PCB-1 v 4.04 to be a fine but unreliable program.
We have spent lots of hours and days trying to figure out ways of
circumventing different bugs in the program. The resulting PCBs from a
PostScript printer can differ quite a bit compared to pen-plotter output.
Every other time when trying to create HPGL plotter files for our PCB lab
the program crashes completely and screws up its own settings. So
we end up copying a "fresh" version of the program to the hard disk

quite often... Our problems might be related to out operating system (6.0.7 Finnish version) or equipment (mac plus, mac II) or something else. If anyone has information on these problems please tell me...

On the other hand, another lab here uses the McCad PCB ESD "professional" version with no problems. Alas, there is more than one order of magnitude difference between the prices of the McCad PCB-1 and McCad PCB ESD.

****

We have had some problems in communicating with the Vamp Inc. No such problems existed with Douglas Eletronics. Maybe Vamp was not interested in selling low-end programs.

If there is need I'll post this subjective and biased comparision of the two programs again in beginning of September after getting some experience with the Douglas package. Someone else with more experience on these non-professional programs might want to comment on this subject too. Any comments are very welcome!

--
Kim Fallstrom I email: kfa@hut.fi
HUT Laboratory of Physics I tel: 358-0-451 3143
Finland I fax: 358-0-451 3116

1432. Re: Wide Range Freq. Descriminator circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 07:39:48 UTC
From: jdow@BIX.com
Message-ID: <jdow.771406788@BIX.com>
Source record: 117622

dean@splinter.coe.neu.edu (Dean Gelabert) writes:

>Hi:
> Does anyone have a simple circuit for a wide range freq. descriminator?
>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
>-Dean

Ah, how accurate do you want it? Is the input constant amplitude already?
If it is constant amplitude you can then capacitor couple it with a VERY
small capacitor and meter the output voltage. But that is TERRIBLY messy.
You could up-convert to say 4 or 5GHz and use a transmission-line
discriminator or a PLL discriminator. But that also is awkward. Nothing
simple presents itself. Maybe more details would help.
{^_^}

1433. Re: Wide Range Freq. Descriminator circuit wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 07:43:39 UTC
From: jdow@BIX.com
Message-ID: <jdow.771407019@BIX.com>
Source record: 117623

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In article <DEAN.94Jun10043709@splinter.coe.neu.edu>,
>Dean Gelabert <dean@splinter.coe.northeastern.edu> wrote:
>>Hi:
>> Does anyone have a simple circuit for a wide range freq. descriminator?
>>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
>>-Dean

>Use an MC10E016 to divide by 256, then use an MC10ELT21 to convert from ECL
>to TTL, and then use a 74LS109 dual flip flop to divide by 4. You now have
>a range of about 30 kHz. to 1 MHz. Use a frequency-to-voltage converter
>as a discriminator on this signal. Analog Devices makes some
>good F/V converters.

>Rick Karlquist N6RK
>rkarlqu@scd.hp.com

That'd be good for a frequency meter anyway. It might do gnarsties if he is
trying to demodulate things or get a "near instant" frequency determination.
We DO need more data re the application, nie?
{^_-}

1434. Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 17:28:46 UTC
From: white@ccsua.ctstateu.edu
Message-ID: <1994Jun12.122846.1@ccsua.ctstateu.edu>
Source record: 117624
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I purchased 2 kits from RADIOKIT (New Hampshire) recently (the QRP-20
by K1BQT and the 7MHz Optimized by W7EL).
First, the 7MHz kit was missing SEVEN parts (5 caps, 1 pot, 1 resistor). After
2 attempts to get these components replaced over 2 weeks, I received
ONLY the pot. No explanation as to where the rest of the parts are.
Now for the UGLY one..... the QRP-20 kit is a mess.....missing parts,
wrong-sized standoffs for critical transistor heat sink installation,
directions furnished are for the QRP 15 (!) with several "mod sheets",
undrilled PCB connections, PCB layout errors, gross assumptions in
directions, changes in kit that were not forwarded to customers, etc.
and etc. And gee, all this fun for $100. "Easy to build ....comes with
detailed manual and parts diagram [for a different RIG]..... easy to
wind coils with _full_pictorials_ [NOT] ...." etc. etc.
This is reckless merchandising at best. I'm no rocket scientist,
but this is NOT what it was portrayed to be.

1435. midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 17:47:00 UTC
From: graham.collins@tabb.com
Message-ID: <66.384.1855@tabb.com>
Source record: 117632

HI all, I have seen reference to this magazine in the past but have not come up with an address or phone number for this publication, Can someone post the above information please.
Thanks, 73 Graham VE3GHM internet: graham.collins@tabb.com

1436. Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-12 17:56:08 UTC
From: troch@gandalf.Rutgers.EDU
Message-ID: <TROCH.94Jun12135608@gandalf.Rutgers.EDU>
Source record: 117625

Howdy,

I am a new ham, waiting for my license. While I wait patiently for those
12 weeks to pass I figured I would start building some things. One
thing I would like to build is a CW practice oscillator.

Do you have any simple instrctions and parts list for such a job, or
do you know of any place that sells such kits?

I really would appreciate any info you could supply.
Thanks,
Rod

--
--PGP 2.3 Public Key Available (finger me or ask for it)
If you yell try : Rod Troch | Zeta Beta Tau
internet : troch@gandalf.rutgers.edu |
bitnet : troch@zodiac | happyHappy joyJoy
Rutgers University - Faculty of Arts and Sciences / History Dept.
- Microcomputer Analyst (Network Admin)

1437. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 00:15:05 UTC
From: mcovingt@aisun1.ai.uga.edu
Message-ID: <2tg8e9$1k5@hobbes.cc.uga.edu>
Source record: 117626
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

That is unfortunate. Radiokit has been around for quite a few years;
surely they wouldn't have lasted that long if that kind of performance
were the norm.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1438. Just a test

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 01:44:54 UTC
From: cspeck@garnet.msen.com
Message-ID: <2tgdmm$r3u$1@heifetz.msen.com>
Source record: 117627

Why does this remain on the news group? It's been 3 weeks!

1439. Painting a 1.2GHz Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 02:08:31 UTC
From: johnr@soul.tv.tek.com
Message-ID: <2tgf2v$hmm@news.tv.tek.com>
Source record: 117628

Will a coat of paint degrade the performance of a 1.2Ghz antenna? I have a loop yagi from Downeast Microwave that I'd like to spray with some "camouflage" paint. Any info is appreciated.

Thanks,

John Reynolds NZ7J

1440. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 02:16:06 UTC
From: jeffj@crl.com
Message-ID: <2tgfh6$o88@crl2.crl.com>
Source record: 117629
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <2tg8e9$1k5@hobbes.cc.uga.edu> mcovingt@aisun1.ai.uga.edu (Michael Covington) writes:
>That is unfortunate. Radiokit has been around for quite a few years;
>surely they wouldn't have lasted that long if that kind of performance
>were the norm.

Oh, I don't know, maybe they hired a MBA to run their quality control?

Jeff

--
Jeff Jones AB6MB | Remember nothing is impossible to
jeffj@crl.com | a sick mind!

1441. Re: Make a simple scanner?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 05:40:00 UTC
From: bnowak@unixg.ubc.ca
Message-ID: <bnowak.771486000@unixg.ubc.ca>
Source record: 117630

erik@fishtank.equinox.gen.nz (Martin Petersen) writes:

>Would anybody have any plans on how to build a *REALLY* simple scanner.
>Freq range is not important really, as long as it gets something
>different. And ideas/suggestions appreciated..

>Cheers..

Try a tv or vcr tuner. They can be tuned with a 4-30 volt source and
some can cover up to 310 Mhz or more. The if freq is dependant on
the unit so you will have to find a receiver that tunes to its if.

--
73
de VE7QBN

Brad Nowak

1442. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 06:32:15 UTC
From: mjsilva@ted.win.net
Message-ID: <314@ted.win.net>
Source record: 117631

In article <TROCH.94Jun12135608@gandalf.Rutgers.EDU>, Rod Troch
(troch@gandalf.Rutgers.EDU) writes:
>Howdy,
>
>I am a new ham, waiting for my license. While I wait patiently for those
>12 weeks to pass I figured I would start building some things. One
>thing I would like to build is a CW practice oscillator.
>
>Do you have any simple instrctions and parts list for such a job, or
>do you know of any place that sells such kits?
>

First of all, congrats on the new ticket. The standard simple
code-practice oscillator these days uses a 555 chip and a couple of
resistors and capacitors. You could pick up all the parts you need
(except key?) at any Radio Shack, and I'd bet they have the circuit in
one of their few books. If you key the power to the chip you'll get a
slight chirp at the beginning of each tone, which drives me nuts. You
might want to just switch on the oscillator and key the speaker lead.

If you're looking for more stuff to build, find a store that carrys ARRL
books. They have a number of books with lots of design and construction
info. They also have some files available listing parts sources. Don't
have the info handy, but I could dig it up.

Have fun,

Mike, KK6GM

1443. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 13:10:29 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun13.131029.5515@ke4zv.atl.ga.us>
Source record: 117636

In article <TROCH.94Jun12135608@gandalf.Rutgers.EDU> troch@gandalf.Rutgers.EDU (Rod Troch) writes:
>I am a new ham, waiting for my license. While I wait patiently for those
>12 weeks to pass I figured I would start building some things. One
>thing I would like to build is a CW practice oscillator.
>
>Do you have any simple instrctions and parts list for such a job, or
>do you know of any place that sells such kits?

Congrats on the new ticket. The simplest CPO today is just a piezo-electric noisemaker, a battery, and a key. Parts available at Radio Shack. Works good, costs little. However, if you want to be able to vary the tone, you can use one of any number of single or dual transistor oscillators, or something squarewave and raspy like a 555 timer. A two transistor wien bridge feedback oscillator would be the cleanest. Circuits are in the ARRL Handbook. (You should have a copy of this book. If not, get it, but in the meantime your library should have a copy.)

If you want to be absurd, you can program an oscillator on a PC, using it's internal speaker, and key it via a key hooked to a status line on a serial or parallel port. This is actually a good introduction to realtime assembler programming on the PC. If you don't send too fast, you can even program this in Basic. :-)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1444. Painting a 1.2GHZ Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 13:41:38 UTC
From: taylor@tix.timeplex.COM
Message-ID: <9406131341.AA01149@tix.timeplex.com>
Source record: 117633

When I was doing microwave field work, we often painted 11 Ghz
and 18 GHhz antennas for matching color of structures etc. Most
pigments are Ok. Stay away from those that have a high percentage
of metal oxides or suspended partiCLEs, e.g. metallic looking
finishes. On the Empire State Building we painted some 11.7 Ghz
6 ft. Andrew dishes including the radome cover with no measureable loss
of signal.

1445. Re: midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 14:43:36 UTC
From: jal@cray.com
Message-ID: <1994Jun13.094337.18617@ned.cray.com>
Source record: 117637

Midnight Engineering
111 E. Drake Road, Suite 7041
Fort Collins, CO 80525-9828

This was from the March/April 1992 mag, so don'nt know how current it is.

1446. Re: Painting a 1.2GHz Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 15:05:52 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Jun13.150552.9069@vlsi.polymtl.ca>
Source record: 117635

In article <2tgf2v$hmm@news.tv.tek.com> johnr@soul.tv.tek.com (John Reynolds) writes:
>
>Will a coat of paint degrade the performance of a 1.2Ghz antenna? I have a
>loop yagi from Downeast Microwave that I'd like to spray with some
>"camouflage" paint. Any info is appreciated.
>
>Thanks,
>
>John Reynolds NZ7J
>
>
Should be no problem...as long as you do not use any metallic based paints!

Nick

--
****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

1447. Re: Painting a 1.2GHz Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 15:32:05 UTC
From: phil@hansen.ncd.com
Message-ID: <2thu5l$18f$2@rosebud.ncd.com>
Source record: 117634

As I recall... The Down East antenna loop elements are all grounded... If that is the case, I see no problem in painting them.

I would avoid painting the driven element however... Painting this could cause some strange effects.

Phil
de kj6nn

1448. Re: midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 17:04:24 UTC
From: jayk@fc.hp.com
Message-ID: <2ti3io$oie@tadpole.fc.hp.com>
Source record: 117638

James A Lindberg (jal@cray.com) wrote:
: Midnight Engineering
: 111 E. Drake Road, Suite 7041
: Fort Collins, CO 80525-9828

: This was from the March/April 1992 mag, so don'nt know how current it is.

In the Ft. Collins 1993 phone book Midnight Engineering Magazine is
listed at (303) 491-9092. In the 1994 book there is no listing. I
called the number in the 93 book. It rings once then goes to a busy
signal. Doesn't sound too promising.

73, Jay K0GU jayk@fc.hp.com
Hewlett Packard Ft. Collins

1449. Help with Antenna Rotator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 17:58:21 UTC
From: dtiller@cscsun.rmc.edu
Message-ID: <CrCKLA.3Du@cscsun.rmc.edu>
Source record: 117639
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

I recently purchased a tower and VHF antenna system that happened to
come with a house :-) and I'd appreciate it if someone could give me a
hand figuring out the rotator. The previous owner left a control box,
but I don't think it's the correct one. By some clever sleuthing with
my ohm/inductance meter, I've found the following configuration 'up the
tower':

```
25mH 25 mH
Y/G --UUUUU---\/---UUUUU---WH/GY
/\
R/BK-------------/ \ 3 mH
| \--UUUUUU----V/BR
V
O --/\/\/\/\/\--BU
470 Ohm
```

Y/G = Yellow/Green; WH/GY = White/Gray; R/BK = Red/Black; V/BR = Violet/Brown;
O = Orange; BU = Blue

By the looks of it, there are 6 separate wires, with R/BK being ground,
V/BR being the brake, O/BL/R/BK the sense circuit, and Y/G ans WH/GY
being the actual rotator coils. The previous owner says he thinks it's
an alliance HAM IV rotator. Does the above schematic agree? What voltages/
current ratings does this rotator take? The box that was left has 8 outputs -
is it compatible, or is it to another type? (As I recall it says CDR on it -
also 'Cornell Dublier'). If it's not compatible, I'd like to make (a
computer controlled) one. I'm not up to climbing the silly thing (125 feet)
since I fell 'with' an improperly guyed tower some years ago and broke a bone
in my foot. The old courage just ain't the same :-)

Any help will be greatly appreciated, and thanks in advance,
--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
Brady Law critique removed | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
due to liberal PC pressure. | Ashland, Va 23005 | 77d 31' 32.19" W |

1450. HY-GAIN INSTRUCTION/OPERATORS MANUALS up for grabs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 19:42:52 UTC
From: lockhart@mothra.nts.uci.edu
Message-ID: <2ticrs$77@news.service.uci.edu>
Source record: 117640
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.misc

I have been trying to give this away for some time now. Perhaps
someone will take it off my hands this time.

I have the following INSTRUCTION/OPERATORS MANUAL up for grabs:

HY-GAIN THUNDERBIRD (TH3Mk30 THREE ELEMENT HAM ANTENNA.

This INSTRUCTION/OPERATORS MANUAL is in good condition.

The intent is to give this INSTRUCTION/OPERATOR MANUAL to an
individual or entity who ACTUALLY has the equipment.

The first person to send me e-mail and follow up with a large manila
SASE with postage for 3 ounces gets the prise.

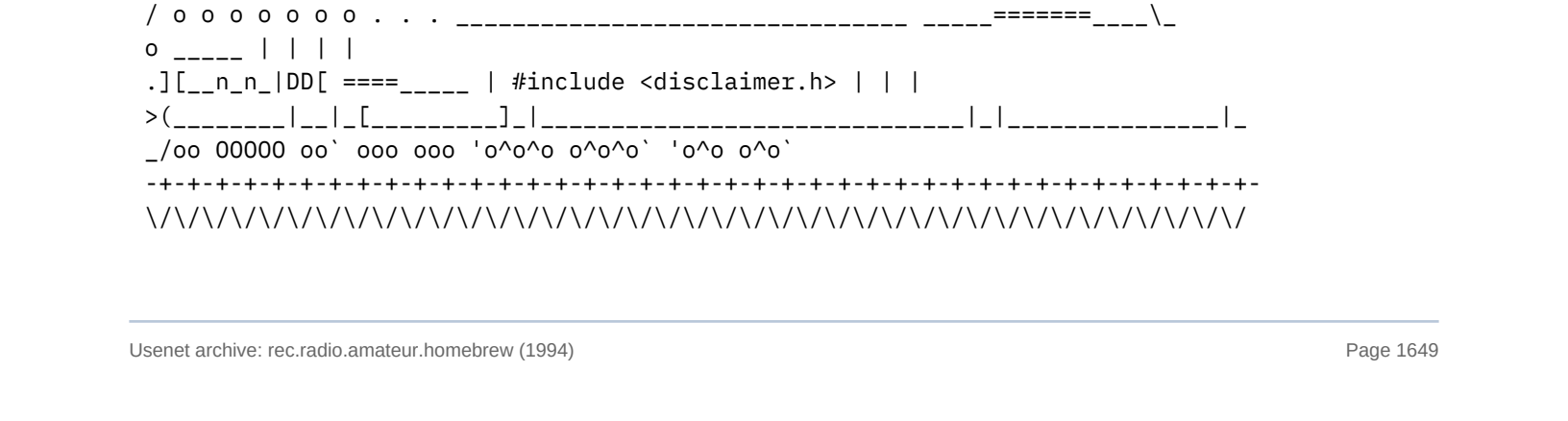
If you are the lucky one, you will be asked to send a SASE (large
manila or other envelope) with the appropriate amount of U.S. postage
to me c/o the address in my .sig file.

Also, as a courtesy, a photocopy of the manual will be sent to anyone
else who sends me a SASE.

Good luck to one and all.

73,

~jack_

/\
| Jack C. Lockhart << SNAILMAIL |
| Radio Systems Engineer E-MAIL > LOCKHART@uci.edu |
| OAC - Electronic Comm. Srvcs. !BANG! > ...!ucbvax!ucivax!lockhart |
| 2209 Central Plant Building HAM > WD6AEI |
| University of California, Irvine AMPR > WD6AEI@n0ary.#nocal.ca.usa.na |
| Irvine, CA 92717-5475 VOICE > (714) 856-8477 |
| U.S.A FAX > (714) 725-2270 |
\/
"And in the beginning there was nothing. And God said, 'let there be
light'. And there was still nothing, BUT you could see IT!" -Anonymous


1451. Re: Help with Antenna Rotator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 20:36:48 UTC
From: ed@fore.com
Message-ID: <CrCrxD.A2E@fore.com>
Source record: 117641
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

Hi Dave, I have 1 piece of info on you rotator...

It's an AC phase reversible motor. We played with one of these for days at
Gateway Tech before figuring out how to make it run.

```
25mH 25 mH
Y/G --UUUUU---\/---UUUUU---WH/GY
/\
R/BK-------------/ \ 3 mH
| \--UUUUUU----V/BR
V
O --/\/\/\/\/\--BU
470 Ohm
```

Y/G = Yellow/Green; WH/GY = White/Gray; R/BK = Red/Black; V/BR = Violet/Brown;
O = Orange; BU = Blue

By the looks of it, there are 6 separate wires, with R/BK being ground,
V/BR being the brake, O/BL/R/BK the sense circuit, and Y/G ans WH/GY
being the actual rotator coils.

To make the motor spin, we used 12vac connected as follows:

ac1 to R/BK (common)

ac2 to Y/G (coil 1)

ac2 through 50uf non pol cap to WH/GY (coil 2)

to reverse direction just switch which coil gets the cap.

I have seen several of these motors, and all have operated on the same principle
of phase lead/lag to make it spin.

I would expect that nearly any rotator would work it provided that the voltage
was same. I have seen a rotor box that had a 24v filament type transformer that
powered it.

Hope this info is of use.

Ed Bathgate
Expect to be N3S** (soon I hope)

1452. Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 21:16:14 UTC
From: mgalatz@panix.com
Message-ID: <mgalatz.1121929814A@198.7.0.1>
Source record: 117642

Is there such a thing as a kit to build a tube receiver

1453. Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 21:36:00 UTC
From: john.davis@nashville.com
Message-ID: <69.918.3064.0N3EE42B@nashville.com>
Source record: 117455

Could somebody please email me the address of the moderator for this newsgroup. Thanx.
john.davis@nashville.com

1454. Thanks: 6M AM HT freqs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 21:56:48 UTC
From: John Nordlie <UD167958@NDSUVM1.BITNET>
Message-ID: <94164.165648UD167958@NDSUVM1.BITNET>
Source record: 117643

Thanks to all the folks who responded to my query about converting
RS walkie-talkies to 6M. Our netnews program here got messed up
and dumped about 12 days worth of news items, so if you sent
me something and I didn't reply, it's nothing personal B-).

1455. Lowfer (1750) plans requested.....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-13 22:11:12 UTC
From: talon@merlin.etsu.edu
Message-ID: <1994Jun13.221112.14134@ra.oc.com>
Source record: 117644

Does anyone know where I can get plans for the Lowfer (1750) band. I am interested in both CW and Voice.

Thanks,
David Fox
KB5ULK

1456. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 02:55:06 UTC
From: little@iamu.chi.dec.com
Message-ID: <2tj66a$9d1@nntpd.lkg.dec.com>
Source record: 117645

Antique Electronic Supply in Tempe AZ I'm fairly certain has at least one tube receiver kit in their catalog.

73,
Todd
N9MWB

1457. HP8052-3081 PIN diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 05:13:03 UTC
From: bsn@ziggy.ph.utexas.edu
Message-ID: <2tje8v$cqq@geraldo.cc.utexas.edu>
Source record: 117646

Can anyone suggest a source for small lot quantities of the above
referenced PIN diode?

Thanks,

1458. Instrumentation coaxial relays?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 06:12:44 UTC
From: little@iamu.chi.dec.com
Message-ID: <2tjhos$ii7@nntpd.lkg.dec.com>
Source record: 117647

I'm building transverters for 903 MHz and 1296 MHz and wondering whether I can use some coaxial relays I picked up at a hamfest for use in T/R switching at low power. They are instrumentation relays from the looks of them, i.e. square boxes with BNC connectors, reed relays inside, and apparently terminated when not powered into a 75 ohm resistive load (according to my trusty multimeter.) I'm assuming they won't handle more than a few watts, but for now that's OK with me. My concern is that they are probably 75 ohm impedence based upon the 75 ohm termination and that they probably came out of some piece of instrumentation where 75 ohms is the norm.

The only real information I have is from a label which indicates they were supplied by R.F. Components, Hoddesdon, Herts, England, model number is A4202.02.28D.82.04. Also from trying them out, they appear to have 12V coils, and be configured as 2 SPST relays sharing the normally open contact.

Will the 50/75 ohm mismatch cause much problem for something like the NEC monolithic power amps such as the SC1043? Also, what's the likely power handling capability of such a relay?

73,
Todd
N9MWB

1459. RE: PCB VIA LASERJET

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 07:01:00 UTC
From: norman.cardillo@woodybbs.com
Message-ID: <93.405.7584.0NFB29ED@woodybbs.com>
Source record: 117457

This looks interesting! I will have to try it sometime!

--- FLAME v1.0
* Origin: Tom's BBS * Milton, MA 617-698-8649 (1:101/470)

1460. ic02e

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 10:25:38 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <2tk0j2$6ka@olivea.ATC.Olivetti.Com>
Source record: 117648
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I am loking for the schematichs diagram and the component view of
the 2 meter RTX named IC02E from ICOM.

It is a 1974 (I guess) 2 meters RTX.

The problem is in the receive section.
Basically it is ok but it need 10 microVolt at the antenna input
in order to receive something.
It should usually be 0.5 microVolt .
I checked this with a R.F. signal gererator.

I do not know if it has an RX preamplifier or what else that can went
bad.

I will really appreciate the schematics but even hits.

please email me at robertov@hqlab.ico.olivetti.com

If anybody is so kind to send me xerox of schematichs and eventualy
components view i can refund his/her money if he/she want to.

It will cost you one dollar for the letter
here is the address :

Ing. C. OLIVETTI S.p.A.
via Jervis 9
10015 IVREA (TO) ITALY

Laboratorio Oliservice
att. Roberto VALFREDINI

Thank to anybody in advance for the time you will give me.

NOTICE
If somebody is going to send me the copies please advise in the internet
other than me in order to not do several and dummy shipment.

Roberto VALFREDINI

1461. 40 Meter QRP CW transciever and 65 W computer power supply for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 12:29:37 UTC
From: bad1679@ultb.isc.rit.edu
Message-ID: <1994Jun14.122937.8615@ultb.isc.rit.edu>
Source record: 117651
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew

I am selling a homebrew 40 meter cw transciever. It covers 7.000-7.075
and about 7.100 - 7.175 mhz, puts out about 2 watts. The receiver is a
direct conversion type, but uses very good audio filtering.

The rig was based on the article in August 1980 issue of QST by W7EL and
improved with better double tuned band pass filter and a chebychev filter in
front of the audio preamp.

I am also selling a 65 Watt computer power supply (I believe it came out of an
XT).

Any inquiries, please email to bad1679@ultb.isc.rit.edu

Thanks..

Bernie Doehner nu1s/2

--
Electrical Engineering, Rochester Institute of Technology, Rochester,NY
Ax25 Packet: NU1S @ WB2PSI.#WNY.NY.USA.NOAM (normal packet route)
TCP/IP: nu1s@nu1s.ampr.org [44.69.0.37]
Internet (school): bad1679@ultb.isc.rit.edu

--
Electrical Engineering, Rochester Institute of Technology, Rochester,NY
Ax25 Packet: NU1S @ WB2PSI.#WNY.NY.USA.NOAM (normal packet route)
TCP/IP: nu1s@nu1s.ampr.org [44.69.0.37]
Internet (school): bad1679@ultb.isc.rit.edu

1462. Re: Painting a 1.2GHz Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 13:49:58 UTC
From: elendir@enst.fr
Message-ID: <2tkci6$5pa@cismsun.univ-lyon1.fr>
Source record: 117650

John Reynolds (johnr@soul.tv.tek.com) wrote:
: Will a coat of paint degrade the performance of a 1.2Ghz antenna? I have a
: loop yagi from Downeast Microwave that I'd like to spray with some
: "camouflage" paint. Any info is appreciated.

The Tour Eiffel transponder 70 to 30 cm has a painted antenna... The
painting has no metallic components, though. The machine works fine !!!

Vince, F1RCS.

1463. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 15:12:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2DFDCA84@msmail.uthscsa.edu>
Source record: 117649

David Fox
ihnp4.ucsd.edu!swrinde!cs.utexas.edu!news.unt.edu!news.oc.com!merlin.etsu.ed
u!t
talon@network.ucsd.edu Writes:

>Does anyone know where I can get plans for the Lowfer (1750) band. I am
>interested in both CW and Voice.
>
>Thanks,
>David Fox
>KB5ULK

Dave,

Send me your fax number (if you have one) or mail (post) address and
I'd be glad to send you a couple of articles on 1750 band.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources
** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

1464. Re: HP8052-3081 PIN diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 17:05:25 UTC
From: erics@cruzio.com
Message-ID: <CrECt4.7Ls@cruzio.com>
Source record: 117653

In article <2tje8v$cqq@geraldo.cc.utexas.edu>, bsn@ziggy.ph.utexas.edu () writes:
>
> Can anyone suggest a source for small lot quantities of the above
> referenced PIN diode?
>
> Thanks,

I've found a couple of sources:

Newark electronics sells them individually for $2.21 ea, 1.95 in 100's
call 1-800-298-3133 x48 for a catalog and info.

Penstock also has them, but only in lots of 100, for @2.00 ea
call 1-408-730-0300 They will also send you an HP catalog if you
ask.

I'm looking for the chip capacitor version of the 3081, called the HPND-0002.
Penstock has them, but again only in 100 lots - Anyone interested in getting
together on an order?

Eric, WA6HHQ erics@cruzio.com

1465. Old semiconductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 17:21:53 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <2tkovh$rf5@dawn.mmm.com>
Source record: 117652
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Hi,
I hope this is an appropriate group for this subject.
I need a telephone number or address of some outfit that can supply obsolete
transistors and other semiconductor devices.
Please email directly.
Thanks.
--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

1466. Ideas for 100Hz-100KHz HV xfmr?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 17:39:38 UTC
From: matthews@ac.wfu.edu
Message-ID: <2tkq0q$3dm@quad.wfunet.wfu.edu>
Source record: 117654

I need an audio (100 Hz -100 KHz) transformer with a secondary that
can go to around 1000 volts. Current is very low, less than 1 mA.

I'm actually using this to apply an alternating electric field to
a small crystal for an experiment I want to do.

Any ideas? Any suggestions for something off the shelf, or if not
what I should worry about in winding my own?

I might be able to get by using a different approach with a 400 volt
secondary.

Thanks for your help.

--
Rick Matthews matthews@wfunet.wfu.edu Ham radio:
Wake Forest University 910-759-5340 (Voice) WA4GSP
Winston-Salem, NC 27109-7507 910-759-6142 (FAX)

1467. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 17:40:45 UTC
From: chappell@rapnet.sanders.lockheed.com
Message-ID: <chappell.20.0@rapnet.sanders.lockheed.com>
Source record: 117655
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <2tg8e9$1k5@hobbes.cc.uga.edu> mcovingt@aisun1.ai.uga.edu (Michael Covington) writes:
>From: mcovingt@aisun1.ai.uga.edu (Michael Covington)
>Subject: Re: Beware of RADIOKIT kits (IMHO)
>Date: 13 Jun 1994 00:15:05 GMT

>That is unfortunate. Radiokit has been around for quite a few years;
>surely they wouldn't have lasted that long if that kind of performance
>were the norm.

>--
>< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
>< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
>< Unless specifically indicated, I am not speaking for the University. > <><
>For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

Not going to mention any callsigns or names but RadioKit was founded by a
very nice couple who are well known in amateur circles in NE and all over.
They no longer own it and the present owner does not seem to be interested
in providing the level of service and quality that was originally there
under the earlier mangement. In fact the previous owners are disappointed
with how things are being presently handled. Thats all I will say except
this should be a wake-up call to the present owner.

Joel - KC1SG
===
|~~~~~~|
| Joel B. Chappell - KC1SG Lockheed Sanders |
| Principal Engineer - Electrical Nashua, NH 03061 |
| |
| -= Standard Disclaimer: All opinions are mine. =- |
| |
| E-Mail to: chappell@rapnet.sanders.lockheed.com |
| or |
| Fido: 1:132/204.1 |
| |
~~~~~~
~~~~~~

1468. Old semiconductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 18:53:04 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <2tkuag$pq@dawn.mmm.com>
Source record: 117656

I am looking for the following parts any info on supplier would be
appreciated:

2N6782 X 80
2N6844 X 50
2N8844 X 30
2N5070 X 90
SD70A (SCR)X 20
BFX34 X 60
BB109 X 60

--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

1469. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 20:00:40 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <CrEKx5.FB@news.ess.harris.com>
Source record: 117657

Hello All -

I can't speak about RadioKit kits, but I sent money for a catalog
a year ago and never received it. From what was posted on the Internet
back then, I wasn't the only one. I talked to the owner while
at Dayton this year. I inquired about getting a catalog, so that I
might be able to purchase some parts. Well, he said they were out. I
asked how then might I order parts (read, how can I send you money,
so that you might profit from it) and his reply was that maybe I could
get together with someone in my area and use their catalog.

Enough said. I will only twist a person's arm so hard, in order
for them to take my money for goods and/or services.

73, gary n2jgu
p.s. try dan's small parts and kits,
624 kits,
oak hills research,
mouser
I have ordered mucho stuff from all the above and have never
felt cheated or ignored. In fact, dan's has the nn1g superhet
on sale for $40 (everything but case)... a good deal for someone
with intermediate building skills.

1470. Service Manual for a Tek 465M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 22:14:06 UTC
From: gary@vulcan.com
Message-ID: <86HXNc1w165w@vulcan.com>
Source record: 117659

Does anyone have a service manual for a Tektronix 465M 'scope ? If so, would they be willing to make a copy of it ? I would be happy to cover the costs. Please respond via email (gary@vulcan.com)

Thanks
Gary

Gary Tennyson
gary@vulcan.com

1471. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 22:47:11 UTC
From: kc4zvw@stardust.oau.org
Message-ID: <CrEsMo.1EL@stardust.oau.org>
Source record: 117662

In article <TROCH.94Jun12135608@gandalf.rutgers.edu>,
Rod Troch <troch@gandalf.Rutgers.EDU> wrote:

>Howdy,
>
>I am a new ham, waiting for my license. While I wait patiently for those
>12 weeks to pass I figured I would start building some things. One
>thing I would like to build is a CW practice oscillator.
>
>Do you have any simple instrctions and parts list for such a job, or
>do you know of any place that sells such kits?

The ARRL book, "Tune in the World" and its replacement "Now your talking"?
has plans for a code-practice oscillator project in chapter 3.

73 de David
--
David Billsbrough
kc4zvw@stardust.oau.org

1472. Re: Instrumentation coaxial relays?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 22:50:18 UTC
From: mack@ncifcrf.gov
Message-ID: <CrEsru.7D4@ncifcrf.gov>
Source record: 117658

In article <2tjhos$ii7@nntpd.lkg.dec.com> little@iamu.chi.dec.com (Todd Little) writes:
>
>I'm building transverters for 903 MHz and 1296 MHz and wondering whether
>I can use some coaxial relays I picked up at a hamfest for use in T/R
>switching at low power.

The concerns you have are real enough, but the one you've forgotten
is the isolation between the poles. If you have 30db isolation and you're
running 10W, then 10mW will be coming into your receiver front end. I think
that's near the limit for a FET (someone else may know better). If it's
an instrumentation relay, it may only be good at HF. At 1Ghz it may have
no isolation. Having a relay that's not resistive at 1Ghz will cause
more problems than you'll ever want to know about even if it is 75ohms
rather than 50ohms. Either buy one that's known to be OK, or measure the
one you have on a network analyser.

Joe Mack NA3T
mack@ncifcrf.gov

1473. Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 23:00:00 UTC
From: Richard@mole.demon.co.uk
Message-ID: <9406151151.aa28242@post.demon.co.uk>
Source record: 117419

A friend is having trouble with sheep rustling - he's has about 70 stolen this summer so far. The local Police won't do anything unless we can tell them who's taking the sheep!

We were thinking of radio tracking to find out where they're going, but there's a few problems.
1. The sheep-mounted bit must be very, very, small and have an invisible antenna.
2. Need a battery life of about ten weeks
3. Range of about 30 miles in hilly terrain
4. The sheep bit must be cheap enough to be disposable
5. The sheep are going missing from a piece of land wityh no obvious gates, so they can't be sent through any sort of localised security gate.
6. The animals may be transported in an aluminium trailer!

I've been thinking of a transponder on the sheep, and a directional tracker, but I shudder at the thought of building such beasties!

Anyone with any thoughts? Anyone experienced this problem before? and solved it?

Thanks

Richard Smith (richard@mole.demon.co.uk)

Antique & classic Auto restorer, Agricultural engineer, shepherd, electrician, electronics design engineer (in order of income!)

1474. Re: midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-14 23:52:22 UTC
From: tonyz@hpwrce.mayfield.hp.com
Message-ID: <104730004@hpwrce.mayfield.hp.com>
Source record: 117661

I just went to Tower Record Bookstore here in Mountain View, Ca.
at lunch looking for Midnight Engineering Magazine. None to be
found. I hope they haven't packed their bags. The title itself
sort of makes you wonder if you should send away for a subscription
or keep buying off the shelf. The sure have some cool articles, though!

1475. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 00:02:29 UTC
From: tonyz@hpwrce.mayfield.hp.com
Message-ID: <104730005@hpwrce.mayfield.hp.com>
Source record: 117660

In rec.radio.amateur.homebrew, mgalatz@panix.com (Menachem Galatz DC) writes:

> Is there such a thing as a kit to build a tube receiver

Menachem, if you don't find one and want a good reference book
for building your own tube receiver, let me know by email.

Finding the parts can be a real bear, especially if you cant
get to a ham radio flea market or know old codger with an extensive
junk box (and to think when I was a lad I had all that stuff too,
tubes, sockets, coils, switches and air-variable caps by the truckloads!)

I just saw a book at Tower Record Bookstore that had to do with
building tube radios...most of them I saw used dry cells for B+ and
bias. Most of the circuits looked like low plate voltages..much safer
believe me... I built a two-tube regenerative radio with 450VDC B+
when I was a kid... unfortunately, the headphones were in series with
B+ and the cables were frayed...needless to say, I contacted the B+
at the ear and got knocked off my chair and landed about 6 feet away
on the floor. I have a real respect for that B+ jive! I forgot
the title of the book, but I can get it for you, ok?

Glad to see you are interested in tubes....they sure bring back a
lot of memories...

Tony WB6TRU

1476. Boonton VHF Q meter help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 02:41:29 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Jun14.224129.16861@wb3ffv.wb3ffv.ampr.org>
Source record: 117665

I recently picked up an old Boonton model 190A Q meter. This is the VHF version, covering something like 20 to 260 MHz. Does anyone have any information on it? It seems to work OK, but operating instructions would still be helpful, even though it's easy enough to figure out for the most part. How about a schematic? That would be really appreciated!

1477. Re: Old semiconductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 03:48:25 UTC
From: dws30@p1svp11.amdahl.com
Message-ID: <1994Jun15.034825.27394@ccc.amdahl.com>
Source record: 117667
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <2tkovh$rf5@dawn.mmm.com>, tahir@tcdsp1.mmm.com ("Tahir Kayani") writes:
|> Hi,
|> I hope this is an appropriate group for this subject.
|> I need a telephone number or address of some outfit that can supply obsolete
|> transistors and other semiconductor devices.
|> Please email directly.
|> Thanks.
|> --

Post what your after, I'm sure a few of us may have one or two in our junk boxes.

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com

1478. Re: Lowfer (1750) plans requested.....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 03:52:11 UTC
From: mjsilva@ted.win.net
Message-ID: <316@ted.win.net>
Source record: 117664

In article <1994Jun13.221112.14134@ra.oc.com>, David Fox (KB5ULK) (talon@merlin.etsu.edu) writes:
>
>Does anyone know where I can get plans for the Lowfer (1750) band. I am
>interested in both CW and Voice.
>
QST had an article on Lowfers last October, and plans for a transceiver
(CW) this April.

73,
Mike, KK6GM

1479. Packet modem ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 07:03:03 UTC
From: demetre@phaethon.intranet.gr
Message-ID: <2tm937$rai@helios.intranet.gr>
Source record: 117663

CQ Netters,

Does anyone have a scematic of a homebrewed packet modem that actually
works ??
Please reply via e-mail...

73's

demetre@intranet.gr

1480. Re: midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 08:10:33 UTC
From: bcieslak@mkelan5.remnet.ab.com
Message-ID: <bcieslak.90.00082CF4@mkelan5.remnet.ab.com>
Source record: 117420

In article <104730004@hpwrce.mayfield.hp.com> tonyz@hpwrce.mayfield.hp.com (Tony Zugec) writes:
>From: tonyz@hpwrce.mayfield.hp.com (Tony Zugec)
>Date: Tue, 14 Jun 1994 23:52:22 GMT
>Subject: Re: midnight engineering

>I just went to Tower Record Bookstore here in Mountain View, Ca.
>at lunch looking for Midnight Engineering Magazine. None to be
>found. I hope they haven't packed their bags. The title itself
>sort of makes you wonder if you should send away for a subscription
>or keep buying off the shelf. The sure have some cool articles, though!

I used to subscribe to midnite engineering...It was good at times but not consistently enough for me to renew...I was interested in it for it entrepreneureal,(where's my spelling checker when I need it), articles when I was running a side consulting business....And at the time it was only quarterly.

I think they have it at our local bookstore if you want I can pick up a copy fer ya.

Brian- AE9K

1481. Re: Painting a 1.2GHz Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 09:01:40 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994Jun15.090140.43841@ucl.ac.uk>
Source record: 117666

In article hmm@news.tv.tek.com, johnr@soul.tv.tek.com (John Reynolds) writes:
>
> Will a coat of paint degrade the performance of a 1.2Ghz antenna? I have a
> loop yagi from Downeast Microwave that I'd like to spray with some
> "camouflage" paint. Any info is appreciated.
>
> Thanks,
>
> John Reynolds NZ7J
>
>

There is a conformal coating avaable from RS and Farnell in the UK. If you need exact type, mail me directly. Anyway, it is said to have good dielectric properties. To get the best from it, you need to bake at ~200 deg C for a couple of hours. I did intend using it to increase the working voltage of an air-spaced cap at 144MHz once. I must have been satisfied it would be okay at that frequency anyway. As a matter of interest, it is said to withstand an E field of 50kV/mm.

davek

1482. Re: Ideas for 100Hz-100KHz HV xfmr?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 10:37:28 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun15.103728.17359@ke4zv.atl.ga.us>
Source record: 117427

In article <2tkq0q$3dm@quad.wfunet.wfu.edu> matthews@ac.wfu.edu (Rick Matthews) writes:
>I need an audio (100 Hz -100 KHz) transformer with a secondary that
>can go to around 1000 volts. Current is very low, less than 1 mA.
>
>I'm actually using this to apply an alternating electric field to
>a small crystal for an experiment I want to do.

This isn't trival if the bandpass has to be flat over that span.
Ordinary iron core modulation transformers only go up to about
20 kHz before hysteresis losses and interturn capacitance causes
response to roll off. Most ferrite core designs don't cover the
low end well. So, another approach might be better, such as a
capacitance coupled circuit. A single pole would give a 3 db
per octave rolloff, but suitable RC multi-pole designs could
give a flat response. Better still would be a direct coupled
push pull active design using tubes that can tolerate 1000 VAC
without flashing over.

If you don't need flat response, most any filament transformer
can be pressed into service as a modulation transformer. Their
voltage rating is generally sufficient to tolerate 1000 VDC
at low current.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1483. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 11:01:45 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-771678100@unomaha.edu>
Source record: 117418
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

```
Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info,
and rec.radio.swap newsgroups. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to the
author, Jay Maynard, K5ZC, by Internet electronic mail at
jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September
1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to
note the rmgroup of rec.radio.amateur.packet, and to officially retire some
(in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list
for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions
were held on the mailing list, and sent to the mailboxes of those who had
signed up for it. When the Usenet software was created, and net news as we
now know it was developed, a newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began
to dominate other topics in the group and on the list. This resulted in the
logical solution: a group was created to hold the packet discussion, and
another corresponding mailing list was created as well: net.ham-radio.packet
and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great
Renaming essentially unchanged, moving from net.ham-radio[.packet] to
rec.ham-radio[.packet]. Readership and volume grew with the rest of the
network.

The INFO-HAMS mailing list was originally run from a US Army computer at
White Sands Missile Range, SIMTEL20. There were few problems with this
arrangement, but one was that the system was not supposed to be used for
commercial purposes. Since one of hams' favorite pastimes is swapping
gear, it was natural for hams to post messages about equipment for sale
to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use
restriction, and after some argument, a group was created specifically
```

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
===========================

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

1484. Re: HP8052-3081 PIN diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 12:41:48 UTC
From: zlau@arrl.org
Message-ID: <1994Jun15.124148.8146@arrl.org>
Source record: 117437

I noticed them for $1.99 each in the Allied/Hallmark catalog
1-800-433-5700.

bsn@ziggy.ph.utexas.edu wrote:

: Can anyone suggest a source for small lot quantities of the above
: referenced PIN diode?
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1485. Re: Lowfer (1750) plans requested.....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 12:52:53 UTC
From: jcw@kd4dts.atl.ga.us
Message-ID: <1994Jun15.125253.19450@kd4dts.atl.ga.us>
Source record: 117421

There is a magazine (actually, more of a newsletter) called Lowfr. I don't
have the address, but if you send me e-mail, I can go look for the address.
If you're interested in QRP also (a lot of lowfers seem to be), there is
a company called 624 Kits that makes QRP and lowfer kits.

- John
mjsilva@ted.win.net (Michael Silva) writes:

>
>In article <1994Jun13.221112.14134@ra.oc.com>, David Fox (KB5ULK) (talon@merlin.etsu.edu)
writes:
>>
>>Does anyone know where I can get plans for the Lowfer (1750) band. I am
>>interested in both CW and Voice.
>>
>QST had an article on Lowfers last October, and plans for a transceiver
>(CW) this April.

>73,
>Mike, KK6GM
>

--

John C. Wren (kd4dts) | "The UNIX operating system has a command, NICE,
jcw@kd4dts.atl.ga.us | which allows a user to voluntarily reduce the
..!emory!wa4mei!kd4dts!jcw | priority of his process, in order to be nice to

1486. Ceramic Filter IN/OUT Impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 13:43:22 UTC
From: SPIKE@EESTAFF.watstar.uwaterloo.ca
Message-ID: <SPIKE.265.2DFF057A@EESTAFF.watstar.uwaterloo.ca>
Source record: 117422

We have an SFU-455B ceramic filter from Radio Shack.
It has been installed in a tube circuit in the IF chain.

There seems to be an impedance matching problem. We are looking for the
input and output impedance specifications.

The input to the filter is being driven from the one IF transformer output.
The output of the filter is driving the input of a pentode.

Thank you in advance for any help you can give.
de Gord VE3EOS and ED VE3TCK

73, de EDward Spike spike@eestaff.watstar.uwaterloo.ca
*
* AMATEUR RADIO: ve3tck@at.ve3uow.ampr.org
* or VE3TCK@VE3UOW.#SWON.ON.CA.NA
*- - - -/ IEEE Robot Olympics and MicroMouse Competition Committee
* micro-mouse@ieee.org or mouse@sunee.uwaterloo.ca
* E & CE Dept. University of Waterloo, Waterloo, Ontario,
* Canada, N2L3G1. (519)888-4567, X-3716, fax:(519)888-6197
==

1487. Tube number EF-50

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 13:46:42 UTC
From: SPIKE@EESTAFF.watstar.uwaterloo.ca
Message-ID: <SPIKE.266.2DFF0642@EESTAFF.watstar.uwaterloo.ca>
Source record: 117423

Gord VE3EOS is looking for an EF-50 tube from a 19 set.
Please contact Gord if you know of a source.

for Gord VE3EOS@ve3euk.#SWON.ON.CAN.NA or
HAYWARD@NET2.EOS.UOGUELPH.CA

73, de EDward Spike spike@eestaff.watstar.uwaterloo.ca
*
* AMATEUR RADIO: ve3tck@at.ve3uow.ampr.org
* or VE3TCK@VE3UOW.#SWON.ON.CA.NA
*- - - -/ IEEE Robot Olympics and MicroMouse Competition Committee
* micro-mouse@ieee.org or mouse@sunee.uwaterloo.ca
* E & CE Dept. University of Waterloo, Waterloo, Ontario,
* Canada, N2L3G1. (519)888-4567, X-3716, fax:(519)888-6197
==========

1488. Re: Lowfer (1750) plans requested.....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 14:15:11 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <84905@uugate.wa7slg.ampr.org>
Source record: 117424

One good place for current LowFER information is from the Longwave Club of America (LWCA) at 45 Wildflower Road, Levittown, PA 19057.

They'd appreciate it if you were to send an SASE when you request information.

This club has been active since the middle-early 70's and it specializes it those things below 500 KHz (well, below the AM BCB, anyway...)

Often, they carry information on most any aspect of low frequency stuff, from propagation, to NDB monitoring, to construction articles, to whatever. Several years ago, they had a great series of articles on "The Sounds of Natural Radio" which covered whistlers, "tweets", and other spherics... as well as "Earth Currents"...

There have been other informal newsletters from time-to-time, but as with other things, they ebb and flow depending on critical mass, free time of those involved, etc.

One thing about LowFER communications: I found it to be very much like moonbounce in many ways in that you are always fighting some pretty horrid SNR's, etc. One thing, though: A properly-equipped pair of transmit-receive stations should consistantly have >700 mile groundwave coverage (daytime...) The Utah-California path was pretty consistant. Of course, you need to take great pains to assure this (The TX had a phenomenally effeicient antenna system (approaching 1%!!!) and the RX station had a monsterous receive antenna, and was 8 miles from the nearest powerline...) but "normal" people (with "normal" installations) were able to copy him as well very frequently using CW... My best DX was hearing 9HDQ (Indiana) when I lived in Flagstaff, AZ, using active whip and my TR-7 with a 1.8 KHz SSB filter... Pretty good signals from all around, that night...

<Clint>

1489. Re: Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 14:46:31 UTC
From: jcw@kd4dts.atl.ga.us
Message-ID: <1994Jun15.144631.19774@kd4dts.atl.ga.us>
Source record: 117425

Wouldn't it be easier to put some kind of electronic perimeter fence (laser, capacitive, siesmic) and just go tearing out there with you Uzi in hand, instead? With the constraints you've placed on the transmitter, current technology is not going to be cost effective. Another option may be to use some kind of infrared cameras and a VCR. Only problem with this is that sheep are going to show up. Maybe wire a couple of the sheep with 5 pounds of C-4 with a radio receiver, and if the carrier ever drops, *KABOOM*. No more sheep, no more sheep rustler...

Richard@mole.demon.co.uk (Richard Smith) writes:

>A friend is having trouble with sheep rustling - he's has about 70 stolen
>this summer so far. The local Police won't do anything unless we can tell
>them who's taking the sheep!

>We were thinking of radio tracking to find out where they're going, but
>there's a few problems.
>1. The sheep-mounted bit must be very, very, small and have an invisible
>antenna.
>2. Need a battery life of about ten weeks
>3. Range of about 30 miles in hilly terrain
>4. The sheep bit must be cheap enough to be disposable
>5. The sheep are going missing from a piece of land wityh no obvious gates,
>so they can't be sent through any sort of localised security gate.
>6. The animals may be transported in an aluminium trailer!

>I've been thinking of a transponder on the sheep, and a directional
>tracker, but I shudder at the thought of building such beasties!

>Anyone with any thoughts? Anyone experienced this problem before? and solved it?

>Thanks

>Richard Smith (richard@mole.demon.co.uk)

>Antique & classic Auto restorer, Agricultural engineer, shepherd,
>electrician, electronics design engineer (in order of income!)

--

John C. Wren (kd4dts) | "The UNIX operating system has a command, NICE,
jcw@kd4dts.atl.ga.us | which allows a user to voluntarily reduce the
..!emory!wa4mei!kd4dts!jcw | priority of his process, in order to be nice to

1490. Re: Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 15:48:00 UTC
From: patrick_tatro@stortek.com
Message-ID: <patrick_tatro.51.7C558180@stortek.com>
Source record: 117426

In article <9406151151.aa28242@post.demon.co.uk> Richard@mole.demon.co.uk (Richard Smith) writes:
>From: Richard@mole.demon.co.uk (Richard Smith)
>Subject: Animal tracking
>Date: Tue, 14 Jun 1994 23:00:00 +0000

>A friend is having trouble with sheep rustling - he's has about 70 stolen
>this summer so far. The local Police won't do anything unless we can tell
>them who's taking the sheep!

>We were thinking of radio tracking to find out where they're going, but
>there's a few problems.
>1. The sheep-mounted bit must be very, very, small and have an invisible
>antenna.
>2. Need a battery life of about ten weeks
>3. Range of about 30 miles in hilly terrain
>4. The sheep bit must be cheap enough to be disposable
>5. The sheep are going missing from a piece of land wityh no obvious gates,
>so they can't be sent through any sort of localised security gate.
>6. The animals may be transported in an aluminium trailer!

>I've been thinking of a transponder on the sheep, and a directional
>tracker, but I shudder at the thought of building such beasties!

>Anyone with any thoughts? Anyone experienced this problem before? and solved it?

>Thanks

>Richard Smith (richard@mole.demon.co.uk)

>Antique & classic Auto restorer, Agricultural engineer, shepherd,
>electrician, electronics design engineer (in order of income!)

One problem would be is that all the animals would require transmitters.
We have a local company that has developed marking devices for animals. The
device is inserted under the skin of the animal and can be electronically
detected. So you would always be able to identify your animals. The company
name is : Destron-IDI, 2995 Wilderness Pl., Boulder, Colorado, 80302

1491. Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 16:12:47 UTC
From: jangus@skyld.grendel.com
Message-ID: <771696767snx@skyld.grendel.com>
Source record: 117429

In article <9406151151.aa28242@post.demon.co.uk> Richard@mole.demon.co.uk writes:

> A friend is having trouble with sheep rustling - he's has about 70 stolen
> this summer so far. The local Police won't do anything unless we can tell
> them who's taking the sheep!

> Anyone with any thoughts? Anyone experienced this problem before?
> and solved it?

My sugestion would be Colbalt 60. Should be easy enough to track.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

Hate "Green Card Lottery"? Want to help curb ignorant crossposting on Usenet?
E-mail ckeroack@hamp.hampshire.edu for more information, or read news.groups.

1492. Txer circuits needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 16:33:32 UTC
From: Bill.Mathieson@f125.n635.z3.fidonet.org
Message-ID: <e81_9406181518@unique.pronet.com>
Source record: 117464

I am considering going for my amateur licence soon, and was wondering if anyone on the echo knows of any circuits that have been published in the electronics/amateur magazines for a reasonably easy to build low power AM/SSB transmitter (something like 15 or 20 watts, to build up while studying for the course). Solid state would be preferable to valves.
Any help would be appreciated.

Thanks, Bill.

1493. Re: Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 16:54:16 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun15.165416.20186@ke4zv.atl.ga.us>
Source record: 117430

In article <1994Jun15.144631.19774@kd4dts.atl.ga.us> jcw@kd4dts.atl.ga.us (John C. Wren) writes:
>Wouldn't it be easier to put some kind of electronic perimeter fence (laser,
>capacitive, siesmic) and just go tearing out there with you Uzi in hand,
>instead? With the constraints you've placed on the transmitter, current
>technology is not going to be cost effective. Another option may be to
>use some kind of infrared cameras and a VCR. Only problem with this is
>that sheep are going to show up. Maybe wire a couple of the sheep with
>5 pounds of C-4 with a radio receiver, and if the carrier ever drops,
>*KABOOM*. No more sheep, no more sheep rustler...

Obvious solutions to Americans, but Richard isn't in a free country. He can't just deal with the rustlers without the jackboots of authority coming down on him.

I think a pulse transmitter is going to be the best bet. Peak power can be high enough to be detected at a distance but average power would be low enough to allow for decent battery life. A two FET circuit with one FET acting as a timer/switch and the other as the switched oscillator should do. I like the idea of the C4 better though. :-)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1494. Plans for packet modem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 17:53:58 UTC
From: Bren.Doreck@utmb.EDU
Message-ID: <01HDKLHX2RNQ002R8O@BEACH.UTMB.EDU>
Source record: 117428

I know that someone posted a similar request for plans for a homebrew packet modem the other day. I someone does have plans or an FTP site with plans, could you send me a carbon copy or email.

Also could you recommend software to use with it, or will any communications SW work with it (ProComm,SmartComm,etc.)?

TNX
Bren
KC5GWA
BDORECK@BEACH.UTMB.EDU

1495. Re: Animal Tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-15 23:00:00 UTC
From: Richard@mole.demon.co.uk
Message-ID: <9406160943.aa22977@post.demon.co.uk>
Source record: 117439

John C. Wren writes:
>Wouldn't it be easier to put some kind of electronic perimeter fence (laser,
>capacitive, siesmic) and just go tearing out there with you Uzi in hand,
>instead? With the constraints you've placed on the transmitter, current
>technology is not going to be cost effective. Another option may be to
>use some kind of infrared cameras and a VCR. Only problem with this is
>that sheep are going to show up. Maybe wire a couple of the sheep with
>5 pounds of C-4 with a radio receiver, and if the carrier ever drops,
>*KABOOM*. No more sheep, no more sheep rustler...

Hmmm. Problem is the perimeter is about five miles long, changes elevation by about 500 feet, goes through woods and streams and the sheep could be going through *any* section of it. Then it's about eight miles of narrow, twisty road from my friends farmhouse to the land where the sheep are. All this kinda rules out perimeter guards or IR cameras.

The last solution maybe an answer, though ;->

Cheers

Richard Smith (richard@mole.demon.co.uk)

Antique & classic Auto restorer, Agricultural engineer, shepherd, electrician, electronics design engineer (in order of income!)

1496. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 00:39:35 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Jun16.083935.1@ntuvax.ntu.ac.sg>
Source record: 117431
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Jun12.122846.1@ccsua.ctstateu.edu>, white@ccsua.ctstateu.edu writes:
>
> I purchased 2 kits from RADIOKIT (New Hampshire) recently (the QRP-20
> by K1BQT and the 7MHz Optimized by W7EL).
> First, the 7MHz kit was missing SEVEN parts (5 caps, 1 pot, 1 resistor). After
> 2 attempts to get these components replaced over 2 weeks, I received
> ONLY the pot. No explanation as to where the rest of the parts are.
> Now for the UGLY one..... the QRP-20 kit is a mess.....missing parts,
> wrong-sized standoffs for critical transistor heat sink installation,
> directions furnished are for the QRP 15 (!) with several "mod sheets",
> undrilled PCB connections, PCB layout errors, gross assumptions in
> directions, changes in kit that were not forwarded to customers, etc.
> and etc. And gee, all this fun for $100. "Easy to build ....comes with
> detailed manual and parts diagram [for a different RIG]..... easy to
> wind coils with _full_pictorials_ [NOT] ...." etc. etc.
> This is reckless merchandising at best. I'm no rocket scientist,

I second all of the above, not to mention awful performance. Birdies all across
the band. Only redeeming feature is its small size (QRP-20).

> but this is NOT what it was portrayed to be.
>
>

1497. Midnight Engineering address

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 00:46:22 UTC
From: gc@universe.digex.net
Message-ID: <2to7cu$175@universe.digex.net>
Source record: 117432

An earlier poster requested the address for Midnight Engineering magazine.

From the table of contents page of the May/June 1994 issue:

Midnight Engineering
1700 Washington Ave.
Rocky Ford, CO 81067

This is a bimonthly magazine. Subscription rates
1 year (6issues) $24 in USA, $29 to Canada and Mexico, $49 other countries.

gc (a subscriber)

1498. "Renewal" reusable alkaline batteries

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 02:10:00 UTC
From: cornelius@eisner.decus.org
Message-ID: <1994Jun15.221000.3518@eisner>
Source record: 117433
Cross-posted to: rec.radio.amateur.misc,sci.electronics,rec.radio.amateur.homebrew

I am interested in information about Rayovac "Renewal" reusable alkaline batteries.

They look like a good deal, since the batteries themselves are similar in cost to ordinary alkalines, and unlike other rechargables have the full capacity of an alkaline battery , at least for the first few times the battery is reused.

Does anyone have experience with them or understand how they work? Is it possible to charge them yourselves, or are the specs for doing so being kept quiet by the manufacturer?

--
George Cornelius, WB0RRB cornelius@eisner.decus.org
cornelius@mayo.edu

1499. Railroad track as an antenna?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 06:57:17 UTC
From: s9898198@sandcastle.cosc.brocku.ca
Message-ID: <1994Jun16.065717.28348@spartan.ac.BrockU.CA>
Source record: 117438

I have heard a legend that a college radio station (either at MIT, Tufts, or Swarthmore) welded antenna to railroad tracks, and peeved the FCC by broadcasting nationwide. Is this true? If anyone knows, please email me (or post here) If you do know, could you please direct me to some documentation regarding this legend if you can.

This is very important! Thanks in advance.

James R. Storm |
Accounting Student | This message was brought to you by
s9898198@sandcastle.cosc.brocku.ca | the letters M, Q, and the number 6
(905) 227-9571 voice |

1500. SHortwave radio guide book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 07:31:55 UTC
From: idpt783@tpts1.seed.net.tw
Message-ID: <2tov5b$bev@aladdin.iii.org.tw>
Source record: 117434

HI!

I am considering buying a shortwave radio guide book.
Here are 3 three books to choice.
1.Passport World Band Radio 1994
2.1994 Edition Wordldradio TV Handbook
3.Shortwave Listening Guide Book, Harry Helms, Second Edition
Do you have an opinion on which one of these is better for my to buy ?

Please send mail to idpt783@tpts1.seed.net.tw preferably.

thanks a much !
-Percy WANG

1501. Shortwave radio guide book HELP!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 07:32:40 UTC
From: idpt783@tpts1.seed.net.tw
Message-ID: <2tov6o$bfb@aladdin.iii.org.tw>
Source record: 117435

HI!

I am considering buying a shortwave radio guide book.
Here are 3 three books to choice.
1.Passport World Band Radio 1994
2.1994 Edition Wordldradio TV Handbook
3.Shortwave Listening Guide Book, Harry Helms, Second Edition
Do you have an opinion on which one of these is better for my to buy ?

Please send mail to idpt783@tpts1.seed.net.tw preferably.

thanks a much !
-Percy WANG

1502. Shortwave radio guide book HELP!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 07:32:56 UTC
From: idpt783@tpts1.seed.net.tw
Message-ID: <2tov78$bfd@aladdin.iii.org.tw>
Source record: 117436

HI!

I am considering buying a shortwave radio guide book.
Here are 3 three books to choice.
1.Passport World Band Radio 1994
2.1994 Edition Wordldradio TV Handbook
3.Shortwave Listening Guide Book, Harry Helms, Second Edition
Do you have an opinion on which one of these is better for my to buy ?

Please send mail to idpt783@tpts1.seed.net.tw preferably.

thanks a much !
-Percy WANG

1503. Question : Possible to make a scanner ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 10:29:41 UTC
From: fhlee@csam.MY
Message-ID: <9406161033.AA05645@csam.MY>
Source record: 117440
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

Hi,

Sorry if this is a stupid question. I am new and very interested in scanners.
I was just wondering if it is possible to assemble/"make" a scanner
from scratch - I mean going to the electrical shop to buy those transistors,
diodes, etc and assemble it up.

If it is possible, is there a guideline outhere where I can download.

Thanks.

-- fhlee@csam.my

1504. PIN Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 13:08:15 UTC
From: cfishman@pica.army.mil
Message-ID: <9406160908.aa17947@FSAC3.PICA.ARMY.MIL>
Source record: 117441

The HP 3081 PIN diodes turn on full(lowest resistance)

with 100 ma of current thru them....I advise that users

look at the data sheet before spending the bucks...

10 ma will also work but you will have more insertion

loss and poorer intermod response then 100 ma.

Clark Fishman WA2UNN cfishman@pica.army.mil

1505. Re: midnight engineering

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 16:49:56 UTC
From: mzenier@eskimo.com
Message-ID: <Crl1FB.56K@eskimo.com>
Source record: 117269

In <104730004@hpwrce.mayfield.hp.com>, Tony Zugec wrote:
: I just went to Tower Record Bookstore here in Mountain View, Ca.
: at lunch looking for Midnight Engineering Magazine. None to be
: found. I hope they haven't packed their bags.

I saw it on magazine racks at both Computer City (the Tandy owned computer store chain) and at Borders Books (the Kmart owned large bookstore chain) in the last month or so.

Mark Zenier mzenier@eskimo.com mzenier@netcom.com

1506. Re: Question : Possible to make a scanner ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 17:46:36 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun16.174636.26707@ke4zv.atl.ga.us>
Source record: 117443
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.scanner

In article <9406161033.AA05645@csam.MY> fhlee@csam.MY (Lee Fook Heng) writes:
>Sorry if this is a stupid question. I am new and very interested in scanners.
>I was just wondering if it is possible to assemble/"make" a scanner
>from scratch - I mean going to the electrical shop to buy those transistors,
>diodes, etc and assemble it up.

Sure it's possible. A friend of mine builds live steam locomotives in
his basement. Anything is possible to build if you put enough effort
into it. A better question is whether it's practical. Today's scanners
use custom chips that you aren't going to find at the local parts store.
To replace those in your design, you're going to have to use a lot more
discrete logic and a general purpose microprocessor that you program
with the desired scanning algorithms, if you want your scanner to work
like commercial scanners. (You can make an analog scanner with swept
oscillators like those of 20-30 years ago, but I doubt that's what you
want.)

A scanner is nothing more than a wide range receiver that can
automatically tune itself and stop when it detects a signal.
That part is easy. Receivers aren't hard to build, and automatically
tunable oscillators aren't hard to build (typically a programmable
synthesizer in modern scanners, though some still use switched crystal
oscillators). The circuit for stopping on the center frequency of a
detected signal is a little tricky, but not hard either. What becomes
harder are the programmable functions of modern scanners. Commercial
scanners use custom microcontrollers to do that. You'll have to build
a small computer and program it to do the same things. (You can interface
a receiver to an existing computer, like the PC, and do the programming
there, but usually you'll want to use one of the single chip field
programmable controllers on the market.)

If you want features not available on commercial scanners, then you
will have to build your own. But if you are satisfied with the features
of existing commerical scanners, their low price means anything you
build will cost more, and take much more time to do, than it's likely
worth.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1507. Re: "Renewal" reusable alkaline batteries

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 18:43:16 UTC
From: kennish@kabuki.EECS.Berkeley.EDU
Message-ID: <2tq6g4$kka@agate.berkeley.edu>
Source record: 117442
Cross-posted to: rec.radio.amateur.misc,sci.electronics,rec.radio.amateur.homebrew

In article <1994Jun15.221000.3518@eisner>,
George Cornelius <cornelius@eisner.decus.org> wrote:
>I am interested in information about Rayovac "Renewal" reusable alkaline
>batteries.
>
>They look like a good deal, since the batteries themselves are similar
>in cost to ordinary alkalines, and unlike other rechargables have the
>full capacity of an alkaline battery , at least for the first few times
>the battery is reused.
>
>Does anyone have experience with them or understand how they work? Is
>it possible to charge them yourselves, or are the specs for doing so
>being kept quiet by the manufacturer?
>
>--
>George Cornelius, WB0RRB cornelius@eisner.decus.org
> cornelius@mayo.edu

My humble and personal opinion:

They are not suited well for amateur use. They have a relatively
short cycle life (25 cycles), with degrading capacity after
5 cycles. The internal impedance is quite high, so that if
you count on them to supply 1A of power, the terminal voltage
will fall significantly. They have a sloping discharge characteristic,
so the last 50% of the cell capacity is supplied at 1.15V and less.
They can't be quick charged.

They are probably OK, for occasional use, where you may want to
use alkalines in the first place. But, for everyday cycling
use, get NiCds.

-Ken

1508. ATV transmitter plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-16 22:42:17 UTC
From: reddy@ee.ualberta.ca
Message-ID: <2tqkg9$f8l@quartz.ucs.ualberta.ca>
Source record: 117444

does any one know where i can by an inexpensive atv transmitter or where
i can get the plans for one
I would like something small and self contained that has a NTSC input
and an antenna output
thanks

1509. Conversion of Maxon 49-f5 to 6 meters ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 00:17:24 UTC
From: n4zbb@toybox.raleigh.nc.us
Message-ID: <1994Jun17.001724.10205@toybox.raleigh.nc.us>
Source record: 117445

Has anyone done/know details on converting a maxon 49-f5 transceiver to 6 m operation. I know it has one of those speciality PLL ICs for 49Mhz, and wondered if any homebrewer out there has tweeked it for 6. I would like to maintain the earpiece "mike" on the unit and boost its output.

Thanks for any info.

1510. Re: Conversion of Maxon 49-f5 to 6 meters ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 03:30:37 UTC
From: myers@spot.West.Sun.COM
Message-ID: <2tr5ct$opg@abyss.West.Sun.COM>
Source record: 117447

In article 10205@toybox.raleigh.nc.us, n4zbb@toybox.raleigh.nc.us (Ken M. Edwards) writes:
>Has anyone done/know details on converting a maxon 49-f5
>transceiver to 6 m operation. I know it has one of those
>speciality PLL ICs for 49Mhz, and wondered if any homebrewer
>out there has tweeked it for 6. I would like to maintain the
>earpiece "mike" on the unit and boost its output.

I looked at the Tandy TRC-503 (I think). 5 sythesized channels, undoubtably made by Maxon, like the HTX-202, and I concluded that moving it from the designed frequencies was a pain in the butt. The biggest problem would be the fact that the 10.24MHz crystal used for the PLL reference timebase is also used as the 2nd LO injection; changing this changes the 2nd LO offset, which probably makes the radio pretty deaf. Erik Sorgatz posted some notes suggesting success in converting these exact radios, but I'm pretty dubious myself.

Good luck!

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1511. Ten Tec Kit 2mtr synthesized txcvr

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 04:10:57 UTC
From: recny@marconi.w8upd.uakron.edu
Message-ID: <2tr7oh$64@kira.cc.uakron.edu>
Source record: 117446

Has anyone tried one of the new Ten Tek 2 meter mobile kits?

I saw the prototype at Dayton and they were supposed to start shipping in May. I'd like to hear from anyone who has tried it.

Thanks & 73 de Bob / N8SQT
recny@marconi.w8upd.uakron.edu

1512. Re: ATV transmitter plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 05:24:38 UTC
From: frbspd@crl.com
Message-ID: <2trc2m$pk5@crl.crl.com>
Source record: 117448

Reddy Praveen (reddy@ee.ualberta.ca) wrote:
: does any one know where i can by an inexpensive atv transmitter or where
: i can get the plans for one
: I would like something small and self contained that has a NTSC input
: and an antenna output
: thanks

Check out the latest issue of Electronics Now (July 1994), full diagrams
and all.

1513. Re: "Renewal" reusable alkaline batteries

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 13:41:25 UTC
From: jjw@seastar.seastar.org
Message-ID: <1994Jun17.134125.4041@seastar.seastar.org>
Source record: 117458
Cross-posted to: rec.radio.amateur.misc,sci.electronics,rec.radio.amateur.homebrew

As quoted from <2tq6g4$kka@agate.berkeley.edu> by kennish@kabuki.EECS.Berkeley.EDU (Ken A. Nishimura):

<on the subject of Renewal batteries>

> My humble and personal opinion:
>
> They are not suited well for amateur use. They have a relatively
> short cycle life (25 cycles), with degrading capacity after
> 5 cycles. The internal impedance is quite high, so that if
> you count on them to supply 1A of power, the terminal voltage
> will fall significantly. They have a sloping discharge characteristic,
> so the last 50% of the cell capacity is supplied at 1.15V and less.
> They can't be quick charged.
>
> They are probably OK, for occasional use, where you may want to
> use alkalines in the first place. But, for everyday cycling
> use, get NiCds.
>
> -Ken

And after 25 re-charges they have degraded to *only as much*
capacity as a nicad has. The roll-off of voltage gives you some
indication that your batteries are dying, so you can finish a
conversation before replacing them. You can leave them in a scanner
for several months, and still expect them to be darned near to fully
functional when you need it. They don't develop internal shorts that
make you think your pack is charged but it dies instantly when you use
it.
The down side is they ain't worth squat in high-current
applications. If you *must* ALWAYS run your HT on the highest power
setting, these are not for you. I've had very good luck with them in
a DJ-580 on medium and low power, even accidentally leaving it on
overnight *after* heavy use that day, and it was still working the
next day.
They cannot be quick-charged (which tends to mean an early grave
for ni-cads if done often).
Many rigs can charge the ni-cads while running off of 12 volts from
the car. Renewals won't do this.

I'd say they would work well for amateur radio, given that you live
with the FCC regs requiring *only as much power as necessary for the
desired communications*.
--

While (its_not_working()) John Welch, N9JZW
mess_with_it(); jjw@seastar.org

1514. Re: Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 15:49:23 UTC
From: landisj@drager.com
Message-ID: <1994Jun17.114923.81@drager.com>
Source record: 117459

In rec.radio.amateur.homebrew, mgalatz@panix.com (Menachem Galatz DC) writes:

> Is there such a thing as a kit to build a tube receiver

There are lots of tube circuits in the older Radio Amateur Handbooks. I have a '64 edition that is loaded. No - I won't part with it:) I've seen this kind of stuff for sale at hamfests though. Also a good place to find the parts. I even still have some receiving tubes, caps, and a few 125V/6.3V transformers around.

Joe
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WB3JOE.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.

1515. SBL-1 mixer: max DC current allowed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 16:29:35 UTC
From: rlt@ssd.intel.com
Message-ID: <CrJv5C.1sB@SSD.intel.com>
Source record: 117449

I have a question that repeated calls to Mini-Circuits have not been able to resolve. That is, what is the maximum dc current that can flow thru the rf or lo ports of an SBL-1 mixer without any significant performance degradation. I want to use the rf and lo ports as a dc return to ground to reduce part count in my design. I would hope to pass 10-15ma through the ports. I am using the part between 3-30mhz, as a small signal mixer.

Thank you,

Roger Traylor
rlt@ssd.intel.com
--
Roger Traylor
rlt@ssd.intel.com
Intel Corporation - Supercomputer Systems Division
Beaverton, OR 97006

1516. Source for PC board material

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 16:31:31 UTC
From: rlt@ssd.intel.com
Message-ID: <CrJv8K.1w1@SSD.intel.com>
Source record: 117450

Can someone advise me as to a cheap source for one and/or two sided
PC board material.

Thanks,

Roger Traylor
rlt@ssd.intel.com
--
Roger Traylor
rlt@ssd.intel.com
Intel Corporation - Supercomputer Systems Division
Beaverton, OR 97006

1517. Re: Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 17:09:57 UTC
From: jcbach@kocrsv01.delcoelect.com
Message-ID: <1994Jun17.170957.29000@kocrsv01.delcoelect.com>
Source record: 117452

In article <9406151151.aa28242@post.demon.co.uk>, Richard@mole.demon.co.uk (Richard Smith) writes:
> A friend is having trouble with sheep rustling - he's has about 70 stolen
> this summer so far. The local Police won't do anything unless we can tell
> them who's taking the sheep!
>
> We were thinking of radio tracking to find out where they're going, but
> there's a few problems.
> 1. The sheep-mounted bit must be very, very, small and have an invisible
> antenna.
> 2. Need a battery life of about ten weeks
> 3. Range of about 30 miles in hilly terrain
> 4. The sheep bit must be cheap enough to be disposable
> 5. The sheep are going missing from a piece of land wityh no obvious gates,
> so they can't be sent through any sort of localised security gate.
> 6. The animals may be transported in an aluminium trailer!
>
> I've been thinking of a transponder on the sheep, and a directional
> tracker, but I shudder at the thought of building such beasties!
>
> Anyone with any thoughts? Anyone experienced this problem before? and solved it?
>
> Thanks
>
> Richard Smith (richard@mole.demon.co.uk)
>
> Antique & classic Auto restorer, Agricultural engineer, shepherd,
> electrician, electronics design engineer (in order of income!)
>
>

How BIG is the "ranch" . . . i.e. might one construct a tall "watch tower" that can be used to observe the entire estate?

If so, perhaps a more robust scheme would be to build said watch tower, buy a high-power quick-fire riffle with a night-vision scope on it, buy a big coffee pot, and hire a few of the local gun-nuts to stand watch. When they see someone stealing the sheep they pick-off the thieves with a few rounds. You simply load the dead/wounded bodies into the back of an old pick-up truck and drop them off at the doorstep of the local cop who is too lazy to do his job. I think after one of these episodes any further sheep-stealing will be done at someone ELSEs ranch!

--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are

Circuits Bldg Blocks Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

1518. Kits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 17:13:20 UTC
From: matt.mccullar@pubcon.com
Message-ID: <940617234719385@pubcon.com>
Source record: 117463

Welcome to the hobby, Rod! Pick up any edition of _The ARRL Handbook_ within the past 15 years and you'll find all sorts of good code practice oscillator circuits that are small, inexpensive, fun to build, and easy to work with. Most of them use a 555 integrated circuit that you can get at Radio Shack (if you can survive their inflated prices for everything).
Radio Shack is still a great place to start. It worked for me. The BEST thing to do is get a copy of their book, "Getting Started in Electronics" by Forrest Mims III. It's a wonderful starter manual for folks who want to find out what electronics is all about. It does not cover anything in ham radio, but tells you what all the parts do and provides over 100 circuits that you can easily build. This is the book that got me started. It's a large green paperback, all written by hand, and costs just a couple of bucks. Indulge yourself and you'll never regret it.

73 de Matt, KJ5BA

1519. Re: Animal tracking

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 17:14:43 UTC
From: jcbach@kocrsv01.delcoelect.com
Message-ID: <1994Jun17.171443.29173@kocrsv01.delcoelect.com>
Source record: 117453

In article <1994Jun15.144631.19774@kd4dts.atl.ga.us>, jcw@kd4dts.atl.ga.us (John C. Wren) writes:
> Wouldn't it be easier to put some kind of electronic perimeter fence (laser,
> capacitive, siesmic) and just go tearing out there with you Uzi in hand,
> instead? With the constraints you've placed on the transmitter, current

I've often thought it would be kinda neat to do the following:

1) Set-up a perimeter fence with a hi-powered (i.e. industrial metal-cutting) laser.

2) Design a control system that would operate the laser in a pulsed (i.e. PWM'd) fashion at some rediculously LOW duty cycle (like .1%) so that it can be detected by a standard IR phototransistor.

3) When something breaks the beam (i.e. someone walking into/outof the protected zone) the controller would crank-up the duty cycle to 100% for a 1 second period.

4) Pfffffffft . . . no more intruder.
--
James C. Bach Ph: (317)-451-0455 The views & opinions expressed
Advanced Project Engr. GM-NET: 8-322-0455 herein are mine alone, and are
Circuits Bldg Blocks Grp Amateur Radio: WY9F NOT endorsed, sponsored, nor
Delco Electronics Corp. Just say NO to UNIX! encouraged by DE or GM.

1520. Re: SBL-1 mixer: max DC current allowed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 17:21:41 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2tsm35$aam@hpscit.sc.hp.com>
Source record: 117451

In article <CrJv5C.1sB@ssd.intel.com>, Roger Traylor <rlt@ssd.intel.com> wrote:
>I have a question that repeated calls to Mini-Circuits have not been able
>to resolve. That is, what is the maximum dc current that can flow thru
>the rf or lo ports of an SBL-1 mixer without any significant performance
>degradation. I want to use the rf and lo ports as a dc return to ground
>to reduce part count in my design. I would hope to pass 10-15ma through
>the ports. I am using the part between 3-30mhz, as a small signal mixer.
>
>Thank you,
>
>Roger Traylor
>rlt@ssd.intel.com
>--
> Roger Traylor
> rlt@ssd.intel.com
> Intel Corporation - Supercomputer Systems Division
> Beaverton, OR 97006

It seems to me that Minicircuits has published information on DC ratings.
Instead of calling them, look thru all their literature. (I haven't
had much luck calling them with technical questions).
In any case, you shouldn't have any trouble if you're only running 10 or
15 mA. thru the windings.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1521. Re: SBL-1 mixer: max DC current allowed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 18:15:26 UTC
From: josemj1@aplmail.jhuapl.edu
Message-ID: <josemj1-170694140023@joses-mac.jhuapl.edu>
Source record: 117461

In article <CrJv5C.1sB@SSD.intel.com>, rlt@ssd.intel.com (Roger Traylor) wrote:
>
> I have a question that repeated calls to Mini-Circuits have not been able
> to resolve. That is, what is the maximum dc current that can flow thru
> the rf or lo ports of an SBL-1 mixer without any significant performance
> degradation. I want to use the rf and lo ports as a dc return to ground
> to reduce part count in my design. I would hope to pass 10-15ma through
> the ports. I am using the part between 3-30mhz, as a small signal mixer.

That's a good question. First of all, according to MCL's data sheet on the SBL-1, both the RF and the LO inputs connect to a winding of a transformer (no doubt wound on a toroid). The wire used is probably fairly large (28-32 gauge) so there's no real concern about current handling. There is a question about what RF of LO current will cause saturation in the transformers.

The data sheet only says that the absolute max RF or LO power is 50 mW and that the absolute max IF peak current is 40 mA. I'm guessing the IF current restriction is to protect the diodes. So, looking at the RF/LO restriction, 50 mW corresponds to about 32 mA RMS, or 45 mA peak. Since MCL won't give you any better info, my guess is to design your circuit such that the peak current through the RF pin or the LO pin won't exceed 45 mA. In your case, that would be your 15 mADC plus the peak signal current.

Marshall Jose, WA3VPZ
josemj1@aplmail.jhuapl.edu

1522. Re: "Renewal" reusable alkaline batteries

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 18:44:38 UTC
From: jones@San-Jose.ate.slb.com
Message-ID: <2tsqum$266@k2.San-Jose.ate.slb.com>
Source record: 117454
Cross-posted to: rec.radio.amateur.misc,sci.electronics,rec.radio.amateur.homebrew

George Cornelius (cornelius@eisner.decus.org) wrote:
: I am interested in information about Rayovac "Renewal" reusable alkaline
: batteries.
[...]
: Does anyone have experience with them or understand how they work? Is
: it possible to charge them yourselves, or are the specs for doing so
: being kept quiet by the manufacturer?

I've been using them since they first hit the market. One major problem is that the AA size is only rated at 700mA peak current, and the typical HT pulls a little over 1A at high power xmit. My experience is that this _significantly_ cuts down on the power output from an HT. However, if you are using an HT to mostly monitor (mine pulls about 60mA with squelch closed, about 120mA with squelch open at full volume), they work fine.

They have very low self-discharge rate. Ray-O-Vac claims 5 yrs, but I haven't measured it (yet ;-).

Occasionally you'll run into a cell that the charger "never turns off" for. Also, the recharge times in the literature seem pretty optomistic, at least in my experience. (5 hours is the stated time for AA, but mine often take nearly a day.)

The literature implies that the charger pulses the cells at 120Hz (gee... wonder how they generate that! ;-) and measures the voltage between pulses, shutting off when the cells are fully charged.

Every pack of them has an 800 number you can call. Ask them to send you the data sheets. (Sorry, I don't have the number here.)

My recommendation is that they are good for places where a typical NiCd would last at least 5 hours _under worst conditions_ (like with the xmit button down at high power - so the typical HT is not a good candidate), and where the typical alkaline battery would last less than 1 year of "normal" service. (If it lasts longer than 1 year, probably cheaper to just use normal alks.)

My biggest complaint is that they aren't available in the 9V size - I've got a lot of applications where a 9V Renewal would be ideal. (Due to the need to control each cell's charge separately, don't hold your breath on seeing one soon, either.)

My only connection with Ray-O-Vac is as a (fairly) satisfied customer. ;-)

Clark
--

Disclaimer: The opinions expressed above are mine and not those of Schlumberger because they are NOT covered by the patent agreement!

Phone: (602) 345-3638 Internet: jones@San-Jose.ate.slb.com
Packet: KI7TU@K7BUC.AZ.USA.NA RF: KI7TU
Snail: Clark Jones, Schlumberger Technologies, 7855 S. River Pkwy #116, Tempe, AZ 85284-1825

1523. Re: "Renewal" reusable alkaline batteries

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-17 22:27:36 UTC
From: schuster@panix.com
Message-ID: <2tt80o$gcl@panix3.panix.com>
Source record: 117456
Cross-posted to: rec.radio.amateur.misc,sci.electronics,rec.radio.amateur.homebrew

In article <2tsqum$266@k2.san-jose.ate.slb.com>,
Clark Jones <jones@San-Jose.ate.slb.com> wrote:
>
>Occasionally you'll run into a cell that the charger "never turns off" for.

According to Rayovac, who replaced several of my cells for this problem,
the early batches were prone to develop internal shorts after a few
cycles. Send them back.

>The literature implies that the charger pulses the cells at 120Hz (gee...
>wonder how they generate that! ;-) and measures the voltage between pulses,
>shutting off when the cells are fully charged.

Actually it varies the duty cycle from about 70% (if I remember) down to
zero as the voltage rises. When the duty cycle falls to 25% the LED goes
out. However, since the big and small chargers have different peak
current, a 25% duty cycle will deliver different amounts of current when
the light goes out. The only way you'll get full capacity after removing
the cells immediately after the light goes out, is to use the big charger
only for C and D cells. If you charge Aa/AAA's leave them in overnight.

--
Mike Schuster | schuster@panix.com | 70346.1745@CompuServe.COM
------------------- | schuster@shell.portal.com | GEnie: MSCHUSTER

1524. Re: Ceramic Filter IN/OUT Impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 00:29:33 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCrKHDA.Bty@netcom.com>
Source record: 117460

If memory serves, these things have an impedance of around 300 ohms.You'd probably need to use the tapped IF transformers commonly found in older transistor radios. Don't know if they can take tube voltages though.

1525. DC to DC High-voltage Modules

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 01:59:52 UTC
From: raym@omnifest.uwm.edu
Message-ID: <2ttkeo$feh@omnifest.uwm.edu>
Source record: 117462

Have a number of 12VDC input 3000VDC@10ma output modules. 1/2" X 1 1/4" X 2 1/2". Any builder out there have a creative plan for their use? If so, E-mail to: raym@omnifest.uwm.edu and we'll negociate.
###

1526. Wefax on R-7000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 14:25:40 UTC
From: "l.h. bol" <lbol@julian.uwo.ca>
Message-ID: <2tv054$7f4@falcon.ccs.uwo.ca>
Source record: 117465

Has anyone used the IF output of the R-7000 to drive a wide band IF system for the reception of Wefax and/or APT ? If so, can you provide info on the outboard IF system you used ?

lbol@julian.uwo.ca

1527. Re: Ceramic Filter IN/OUT Impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 15:59:58 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun18.155958.10837@galileo.cc.rochester.edu>
Source record: 117466

In <SPIKE.265.2DFF057A@EESTAFF.watstar.uwaterloo.ca> SPIKE@EESTAFF.watstar.uwaterloo.ca writes:

> We have an SFU-455B ceramic filter from Radio Shack.
> It has been installed in a tube circuit in the IF chain.

If this is a Murata/Erie IF filter, they usually have Zin/out in the 1.5K to 2.0K range. I'll have to look it up...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.

"Experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient . . . the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928

1528. UHF diode?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 16:07:39 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun18.160739.11062@galileo.cc.rochester.edu>
Source record: 117467

I am putting together a VHF/UHF directional coupler. I plan to use it at first on 2m, but I would like it to work up to 1.2GHz. I have used 1N34A's at 2 meters before with some success, but I doubt that they will work at much higher freqs. Can someone suggest a good diode to use in the low-gigahertz range? Preferably something with a low Vf like a Schottky, though Vf up to 0.4 V or so is probably ok.

TNX and 73

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.
==========
"Experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient . . . the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
==========

1529. up-conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 17:34:53 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Jun18.113453.1@ccsvax.sfasu.edu>
Source record: 117268

Yet another dumb question from a boatanchor era ham trying to enter the late 20th:

I notice modern HF receivers (or at least the one I just ordered from Index Labs) use UPconversion. The IF in the Index Labs unit, for example, is 50mhz. This clerly creates a favorable image ratio, but in former times would havee been rejected because a) it's hard to generate IF selectivity at that frequency, and the alterative of filtering at AF has its own problems, and b) it's hard to do needed, stable amplification at that frequency.

Obviously these problems have been overcome, because the upconversion systems are getting good reviews, but I wonder if someone can tell my just what technological developments have made this new architecture possible.
For example, the Index Lab RX uses SCAF filters. Are they immune to the intermod and other problems usually associated with audio filters? If so, how so?

(Interestingly, none of the fairly recent ARRL publications I have, including LAST years -- not this year's -- copy of the handbook, is of any use at all. Is the technology changing that fast? Or is the Handbook just in need of a major revision? Or did I just overlook what's actually right there in front of me?)

Thanks much!
Jim
K5YUT

1530. Re: Ceramic Filter IN/OUT Impedance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-18 20:42:12 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun18.204212.17723@galileo.cc.rochester.edu>
Source record: 117270

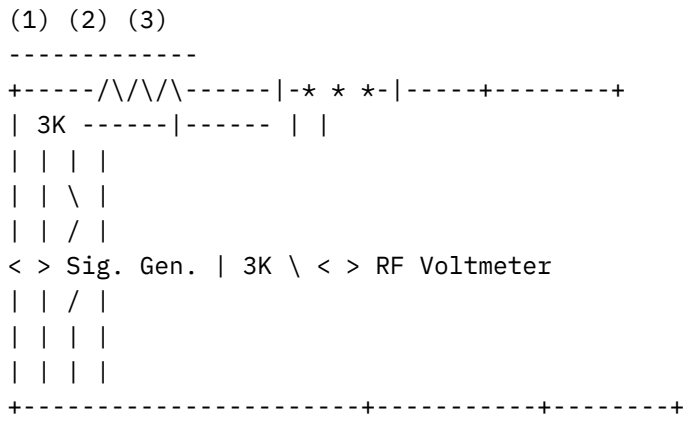
In <SPIKE.265.2DFF057A@EESTAFF.watstar.uwaterloo.ca> SPIKE@EESTAFF.watstar.uwaterloo.ca writes:

> We have an SFU-455B ceramic filter from Radio Shack.
> It has been installed in a tube circuit in the IF chain.
>

From my Murata/Erie catalog...

Model SFU455B (connected to an I.F.T.)
Center Freq 462 +/- 2 KHz
3db BW 10 +/- 3 KHz
Ripple (db max) -
Selectivity (db min) 4 @ +10 KHz / 6 @ -10 KHz
Termination Impedance 3 K-ohm
Spurious Response (db min) 10 (1-3 MHz)
Insertion Loss (db max) 5
Operating Temp Range -10C - +80C
Withstanding Voltage 50 VDC

The schematic for the test circuit ...



Hope this helps...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.

"Experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient . . . the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well meaning but without understanding."

Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
==========

1531. Re: Wefax on R-7000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 00:14:50 UTC
From: kors@netcom.com
Message-ID: <korsCrMBCq.MIu@netcom.com>
Source record: 117271

l.h. bol (lbol@julian.uwo.ca) wrote:
: Has anyone used the IF output of the R-7000 to drive a wide band IF
: system for the reception of Wefax and/or APT ? If so, can you provide
: info on the outboard IF system you used ?

I've used the r7000 for both ppurposes with delightful results using wide-band IF and a good rf preamp. I get noise free Wefax and 8 to 10 minutes of noise free APT into the decoder board. I'm pleased with the results and cost. For APT I used a Ramsey 2 meter pre-amp costing about $15.00.

dick kors
kors@netcom.com

1532. Re: ATV transmitter plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 00:19:20 UTC
From: kors@netcom.com
Message-ID: <korsCrMBK8.MtL@netcom.com>
Source record: 117272

Stephen Dunifer (frbspd@crl.com) wrote:
: Reddy Praveen (reddy@ee.ualberta.ca) wrote:
: : does any one know where i can by an inexpensive atv transmitter or where
: : i can get the plans for one
: : I would like something small and self contained that has a NTSC input
: : and an antenna output
: : thanks

: Check out the latest issue of Electronics Now (July 1994), full diagrams
: and all.

The Rabbit cost $29.95 for a transmitter and receiver at 900 mc . What more could a Ham want?

The Electronics Now kit is very touchy and a challange to build. Mine works, but I'd never do it again.

dick kors
kors@netcom.com
km6ep

1533. 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 00:44:25 UTC
From: aq760@yfn.ysu.edu
Message-ID: <2u04d9$peo@news.ysu.edu>
Source record: 117273

Please forgive me if this is a dumb question, but I just got my ticket and I don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery) be converted to run on other bands, such as 440, legally? I thouhtabout changing the crystal and antenna to the frequency I want. Please do not flame me. Thank you for your time.

73 de KB8SUJ (Technician Plus)

1534. Re: 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 01:08:42 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2u05qq$ber@hobbes.cc.uga.edu>
Source record: 117274

In article <2u04d9$peo@news.ysu.edu> aq760@yfn.ysu.edu (Ben Slagle) writes:
>
>Please forgive me if this is a dumb question, but I just got my ticket and I
>don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
>be converted to run on other bands, such as 440, legally? I thouhtabout
>changing the crystal and antenna to the frequency I want. Please do not
>flame me. Thank you for your time.
>
>73 de KB8SUJ (Technician Plus)

Certainly! As a licensed ham, you are authorized to build your own
transmitting equipment out of anything whatsoever (including other
kinds of transmitters).

There are some further requirements for commercially marketed equipment,
but not homebuilt equipment.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1535. Re: Source for PC board material

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 03:44:17 UTC
From: jgarrett@World.std.com
Message-ID: <Hyx0kmPA4wIG065yn@World.std.com>
Source record: 117282

In article <CrJv8K.1w1@SSD.intel.com>, Roger Traylor wrote:
" Can someone advise me as to a cheap source for one and/or two sided
" PC board material.

Try your local scrap yard. They buy/sell scrap metal, but usually
can't use pc board because its not all copper, so they dump it.
jg

1536. Re: 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 07:28:50 UTC
From: jdow@BIX.com
Message-ID: <jdow.772010930@BIX.com>
Source record: 117275

mcovingt@aisun3.ai.uga.edu (Michael Covington) writes:

>In article <2u04d9$peo@news.ysu.edu> aq760@yfn.ysu.edu (Ben Slagle) writes:
>>
>>Please forgive me if this is a dumb question, but I just got my ticket and I
>>don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
>>be converted to run on other bands, such as 440, legally? I thouhtabout
>>changing the crystal and antenna to the frequency I want. Please do not
>>flame me. Thank you for your time.
>>
>>73 de KB8SUJ (Technician Plus)

>Certainly! As a licensed ham, you are authorized to build your own
>transmitting equipment out of anything whatsoever (including other
>kinds of transmitters).

>There are some further requirements for commercially marketed equipment,
>but not homebuilt equipment.

>--
>< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
>< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
>< Unless specifically indicated, I am not speaking for the University. > <><
>For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

That is true - as far as he goes. Converting a 49MHz HT to 440MHz would be one HECK of a job, though. It is MUCH more than changing a crystal and antenna. It would amount to removing the guts of the radio and rebuilding everything but the case and knobs.
{O.O} jdow@bix.com

1537. Re: Txer circuits needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 08:52:46 UTC
From: mjsilva@ted.win.net
Message-ID: <329@ted.win.net>
Source record: 117276

In article <e81_9406181518@unique.pronet.com>, Bill Mathieson
(Bill.Mathieson@f125.n635.z3.fidonet.org) writes:
>I am considering going for my amateur licence soon, and was wondering if
>anyone on the echo knows of any circuits that have been published in the
>electronics/amateur magazines for a reasonably easy to build low power
>AM/SSB transmitter (something like 15 or 20 watts, to build up while studying
>for the course). Solid state would be preferable to valves.
>Any help would be appreciated.
>
Congratulations on your ambition! I'll give what has become my
standard response: Look at the ARRL Handbook, as well as the W1FB
Notebooks, and (especially) "QRP Classics", all published by ARRL.
I'm sure others can suggest more sources, but you really should have
all the above.

73,
Mike, KK6GM

1538. Scanner docs needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 15:15:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <19JUN199410154511@vax2.concordia.ca>
Source record: 117277

I recently acquired an old Regency crystal controlled 10-channel
scanner at a ham fest. The only other ID markings are stamped on the
case (#204-c26951). has anyone out there heard of this/have docs
for this? The unit has 8 of the channels with crystals and 2
without. Each crystal socket has 3 pin inputs...it does not seem
to make a difference whether I insert the crystal into pin inserts
1 and 2 or 2 and 3. There are also 3 antenna inputs; 2 that
look like car radio plugs and 1 that looks like twin-lead screw
terminals. Again it does not seem to make a difference which
one I use. Finally there are two holes in the top of the case
which look like openings for antenna whips; one is 1/4 inch
in diameter and the other is half that. The unit works so I
want to play with it (the price was $4 so I couldn't resist).
Any help or advice would be much appreciated.
Thanks,
Jack

1539. Re: 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 15:44:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jun19.154413.10142@ke4zv.atl.ga.us>
Source record: 117280

In article <2u04d9$peo@news.ysu.edu> aq760@yfn.ysu.edu (Ben Slagle) writes:
>
>Please forgive me if this is a dumb question, but I just got my ticket and I
>don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
>be converted to run on other bands, such as 440, legally? I thouhtabout
>changing the crystal and antenna to the frequency I want. Please do not
>flame me. Thank you for your time.

It's legal to convert *any* radio, or build one from scratch for that
matter, into the amateur bands as long as the result meets the standards
of good amateur practice in regards spurious emissions. However, the
only *practical* ham band to convert a 49 MHz HT to is 6 meters. You'd
practically have to rebuild it from scratch to make it work right at
70 cm. They make dandy little 6 meter rigs though, and the conversion
is usually easy.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1540. cheap cases wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 17:09:11 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Jun19130911@splinter.coe.neu.edu>
Source record: 117278

Hi:
I'm sick of using those cheap RADIO SHAFT cases for my projects. Does
anyone know of a good source of inexpensive, readily available project cases?
Has anyone tried making their own?

-Dean

1541. Re: 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 17:12:29 UTC
From: domonkos@access.digex.net
Message-ID: <mV71kiubGkoN066yn@access.digex.net>
Source record: 117279

In article <2u04d9$peo@news.ysu.edu>, Ben Slagle wrote:
>
> Please forgive me if this is a dumb question, but I just got my ticket and I
> don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
> be converted to run on other bands, such as 440, legally? I thouhtabout
> changing the crystal and antenna to the frequency I want. Please do not
> flame me. Thank you for your time.
>
> 73 de KB8SUJ (Technician Plus)
Congrats on the ticket! Yes, you can legally convert radio gear to operate
in the ham bands legally, as long as the transmissions meet the spurious
spec's set forth. The best you can expect from the 49Mhz HT is moving it up
to the 6 meter area. You may want to build an outboard solid state amp
too, unless you can get it to work on a nearby repeater. 440Mhz is way out
of it's intended design, so I wouldn't ,ake that my priority. Good luck!

Andy N3LCW

1542. Re: cheap cases wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 20:30:04 UTC
From: julian@bongo.tele.com
Message-ID: <1994Jun19.203004.25778@bongo.tele.com>
Source record: 117281

In article <DEAN.94Jun19130911@splinter.coe.neu.edu> dean@splinter.coe.northeastern.edu writes:
>Hi:
> I'm sick of using those cheap RADIO SHAFT cases for my projects. Does
>anyone know of a good source of inexpensive, readily available project cases?
>Has anyone tried making their own?

There is a simple and cheap solution to this. Go to a trendy designer store such as "Cost Plus" or "Pier One", the sort of place that sells wicker chairs and cheap china. They often sell empty biscuit tins with cute pictures of cats on them. They come in many sizes and shapes, they are tinned for easy soldering.

The other source source of biscuit (sorry cookie U.S.) tins is oriental grocery stores. They sell biscuits in wonderful square tins. Try the durian cookies for a truly different experience. The cookies are cheap and tasty, the tins are free. I have also picked up aluminium "sandwich boxes" at oriental grocery stores. These are an RF tight aluminium box - would cost about $30.00 if they were sold for RF rather than lunch.

If you don't think having your stuff in a tin with pictures on it is "professional" (The correct term is "businesslike") then paint it in a trendy designer pastel or tiresome engineering blue/grey.

--
Julian Macassey, N6ARE julian@bongo.tele.com
Paper Mail: Apt 225, 975 Hancock Ave, West Hollywood, California 90069-4074

1543. Re: 49MHz walkie talkies legal to use for other bands?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-19 21:54:31 UTC
From: mjsilva@ted.win.net
Message-ID: <332@ted.win.net>
Source record: 117285

In article <2u04d9$peo@news.ysu.edu>, Ben Slagle (aq760@yfn.ysu.edu) writes:
>
>Please forgive me if this is a dumb question, but I just got my ticket and I
>don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
>be converted to run on other bands, such as 440, legally? I thouhtabout
>changing the crystal and antenna to the frequency I want. Please do not
>flame me. Thank you for your time.
>
As a ham, you can use any equipment you want, as long as it meets all
the Part 97 specs for the band and mode you're using. If you want to
convert an old TV into a 2m tranceiver, it's legal (not feasible, but
legal!). The only legal problem comes with trying to go the other
way, using ham gear on non-ham frequencies.

As for converting 49MHz walkies, some people are converting them to 6m
(50-54MHz), but you're not going to get it up to 440. That's far too
large a jump.

73,
Mike, KK6GM

1544. Help with RC4739 op amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 04:29:59 UTC
From: koku@kuhub.cc.ukans.edu
Message-ID: <1994Jun19.232959.66122@kuhub.cc.ukans.edu>
Source record: 117283

Hello,
I am building a project out of book that is a few years old and
am having trouble locating an IC called for in the book. The
IC used is the RC4739 or XR4739 dual low-noise op amp. Is this
chip no longer made? Is there a good substitute?

I am having a similar problem finding a CLM6000 opto-isolator
(manufactured by Clairex).

I would greatly appreciate any help that you may be able to give.
I am new to electronic projects and have neither the skill or the
reference books to find a good substitute IC.

Mike, KG0JT

1545. L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 04:48:03 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <CroIo3.DG6@rahul.net>
Source record: 117284

well i am trying to design a L.O for 1.2, 1.3, 1.4, 1.5 ghz. i don't think i can do it with crystals (but if anyone thinks i can i would love to hear from you on how i could do it :). so my idea was to build the oscilator with the good old caps and inductors (feedback type). the thing is though is the fact that i can't find any formulas and schematics on how to build one. i have a schematic for a 2 ghz L.O but it doesn't have any formulas to figure out the components values. so my question is for you experts is do you guys or gals have any schematics,formulas or anything of that nature you could either post or e-mail to me? any light on this subject would be greatly appreciated.

thanx alot,
mlyon@rahul.net
--
Mike Lyon <mlyon@rahul.net>

1546. Re: cheap cases wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 13:57:09 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <Crp83B.83E@news.ess.harris.com>
Source record: 117286

Forunately for me, there are a couple surplus electronics parts stores here in the rochester ny area, so cheap project boxes are available.

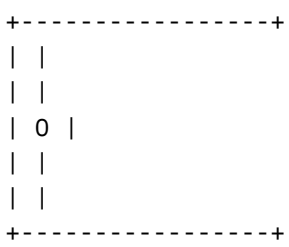
I have used printed circuit board material to make enclosures too. The Doug DeMaw (w1fb) qrp books describe this method. I use my table saw to cut the board to size, then solder the box together. A lot of my projects use plexiglass for a top, so you can see all the goodies inside. Yes, in some cases hand capacitance can play into operation of the radio, so be careful about using a plastic lid. Anyway, I pay 2 cents per square inch of single sided board, so the enclosure price is low. I also have a small aluminum break (sp?) on order from harbor freight (left coast import tool company), so I can get sheet aluminum and form cases that way (i.e. nice 90 degree angles, smooth bends).

73, gary n2jgu

1547. Square transmission lines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 20:22:48 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun20.202248.28363@galileo.cc.rochester.edu>
Source record: 117287

Could someone clue me in to the formula for calculating the characteristic impedance of a coaxial transmission line with a square shield, ie the cross section looks like...



That's a round center conductor there (ie brass tubing). Possible uses for such a bird would be 1) a directional coupler made out of scrap PC board and a piece of wire or tubing or 2) a tapered-line matching section if one tapers the width of the shield...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.
==========
"Experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient . . . the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
==========

1548. Re: Square transmission lines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 21:37:24 UTC
From: tomb@lsid.hp.com
Message-ID: <CrptED.HEp@hpcvsnz.cv.hp.com>
Source record: 117288

Bill VanRemmen (BILLY@urhep.pas.rochester.edu) wrote:
: Could someone clue me in to the formula for calculating the characteristic
: impedance of a coaxial transmission line with a square shield, ie the cross

From "Reference Data for Engineers," seventh edition, Howard Sams, given
that D is the box inside side length and d is the inner conductor diameter,

Zo approx= [138*log(rho)+6.48-2.34*A-0.48*B-0.12*C]/(epsilon)^0.5

where epsilon is the relative dielectric constant,

rho = D/d

A = (1+0.405*rho^-4)/(1-0.405*rho^-4)

B = (1+0.163*rho^-8)/(1-0.163*rho^-8)

C = (1+0.067*rho^-12)/(1-0.067*rho^-12)

Well, you asked for it...

There are also formuale for a single wire in a trough, and a single wire
centered between two parallel ground planes.

1549. Re: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 21:54:19 UTC
From: rkarlqu@scd.hp.com
Message-ID: <2u536b$91s@hpscit.sc.hp.com>
Source record: 117289

In article <CroIo3.DG6@rahul.net>, Mike Lyon <mlyon@rahul.net> wrote:
>well i am trying to design a L.O for 1.2, 1.3, 1.4, 1.5 ghz. i don't
>think i can do it with crystals (but if anyone thinks i can i would love
>to hear from you on how i could do it :). so my idea was to build the
>oscilator with the good old caps and inductors (feedback type). the thing
>is though is the fact that i can't find any formulas and schematics on
>how to build one. i have a schematic for a 2 ghz L.O but it doesn't have
>any formulas to figure out the components values. so my question is for
>you experts is do you guys or gals have any schematics,formulas or
>anything of that nature you could either post or e-mail to me? any light
>on this subject would be greatly appreciated.
>
> thanx alot,
> mlyon@rahul.net
>--
>Mike Lyon <mlyon@rahul.net>

Build a 2 GHz. grounded emitter amplifier using a transistor with an
Ft of 5 GHz. or so. (MRF951 will work fine) Now connect the
cathode of a Toshiba 1SV186 tuning diode (available from Matcom,
Palo Alto, CA) to the collector, which should be connected to
VCC with an RF choke. The anode of the tuning diode is coupled
via a 100 pF. capacitor to the base. This junction also has a 1 K resistor
to feed in the tuning voltage, which is relative to VCC. The leads of the
diode are the tuning inductance; adjust lead length to get the
right frequency range. You should be able to get about an octave.
Be sure to use at least 5 DC volts across the emitter bias resistor
(which of course is RF bypassed) to assure stable bias across the tuning
range. Put a 50 ohm load impedance on the collector and no load on
the base.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

1550. Re: Square transmission lines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-20 22:50:15 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun20.225015.4666@galileo.cc.rochester.edu>
Source record: 117290

In <CrptED.HEp@hpcvsnz.cv.hp.com> tomb@lsid.hp.com writes:

> Bill VanRemmen (BILLY@urhep.pas.rochester.edu) wrote:
> : Could someone clue me in to the formula for calculating the characteristic
> : impedance of a coaxial transmission line with a square shield, ie the cross
>
> From "Reference Data for Engineers," seventh edition, Howard Sams, given
> that D is the box inside side length and d is the inner conductor diameter,
>
> Zo approx= [138*log(rho)+6.48-2.34*A-0.48*B-0.12*C]/(epsilon)^0.5
>
> where epsilon is the relative dielectric constant,
>
> rho = D/d
>
> A = (1+0.405*rho^-4)/(1-0.405*rho^-4)
>
> B = (1+0.163*rho^-8)/(1-0.163*rho^-8)
>
> C = (1+0.067*rho^-12)/(1-0.067*rho^-12)
>
> ---------------------------
> Well, you asked for it...
>
> There are also formuale for a single wire in a trough, and a single wire
> centered between two parallel ground planes.

Thanks Muchly!
73
-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.
==========
"Experience should teach us to be most on our guard to protect liberty
when the government's purposes are beneficient . . . the greatest
dangers to liberty lurk in insidious encroachment by men of zeal, well
meaning but without understanding."
Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
==========

1551. Re: ATV transmitter plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 00:48:30 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Jun21.004830.8510@ultb.isc.rit.edu>
Source record: 117292

In article <korsCrMBK8.MtL@netcom.com> kors@netcom.com (Richard Kors) writes:
>Stephen Dunifer (frbspd@crl.com) wrote:
>: Reddy Praveen (reddy@ee.ualberta.ca) wrote:
>: : does any one know where i can by an inexpensive atv transmitter or where
>: : i can get the plans for one
>: : I would like something small and self contained that has a NTSC input
>: : and an antenna output
>: : thanks
>
>: Check out the latest issue of Electronics Now (July 1994), full diagrams
>: and all.
>
>
>The Rabbit cost $29.95 for a transmitter and receiver at 900 mc . What more could a Ham
want?
>
>The Electronics Now kit is very touchy and a challange to build. Mine works,
>but I'd never do it again.
>
>dick kors
>kors@netcom.com
>km6ep
>

A sub-mini camera at the same price. And a 440 mhz version of the
rabbit for use with our local ATV repeater. And a bunch of people
interested in ATV. From what I've heard, there are very few ATV
enthusiasts.

73...Jim N2VNO

1552. Re: cheap cases wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 02:08:51 UTC
From: frbspd@crl.com
Message-ID: <2u5i3j$a1h@crl.crl.com>
Source record: 117291

Several places have a series of aluminum and steel cases available for under $10 plus lots of other goodies.

Marlin P Jones $ Assoc. (407) 848-8236 - POB 12685, Lake Park, FL 33403

Stock # Size Price

5804-BX 9.5 x 5.0 x 1.5 $4.00
5805-BX 9.0 x 7.0 x 2.0 $4.40
5806-BX 12.0 x 8.0 x 3.0 $5.00

the above are 18ga steel, cadmium plated

Hosfelt Electronics (800) 524-6464 - 2700 Sunset Blvd., Stubenville, OH 43952

14-126 4 x 6 x 2 $3.70
14-127 7 x 7 x 2 $4.35

the above are aluminum

Also try Mouser Electronics and Digi-Key

Stephen Dunifer

1553. Re: cheap cases wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 03:07:03 UTC
From: jimn0oct@aol.com
Message-ID: <2u5lgn$ovf@search01.news.aol.com>
Source record: 117293

In article <2u5i3j$a1h@crl.crl.com>, frbspd@crl.com (Stephen Dunifer)
writes:

all that good stuff...

I've found with the pc board cases that really thick pc board works
better, especially for places where there are plug-ins (power leads,
antennas, etc). Fortunately there is a relatively cheap source of the
thick stuff locally-->1/8th inch thick, 5 square feet for $5.

I once found an extruded aluminum 3X5 card file box (mil surplus, of
course) that is about 1/8th inch thick and a *fantastic* radio box!!!

Good luck!!

72 (+/- 1) Jim N0OCT

1554. Cavities

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 09:07:18 UTC
From: elendir@enst.fr
Message-ID: <2u6ak6$eb4@cismsun.univ-lyon1.fr>
Source record: 117294

Hello !

Does someone have any interesting pointers towards the theory (and practice) of resonating cavities ? I know some facts (frequency, ...) but I am interesting in knowing how to compute Q (Volume/Surface ?) and the formulae for cylindrical cavities.

Thanks !

Vince, F1RCS.

PS : This is for a repeater project.

1555. RE: ANIMAL TRACKING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 09:21:00 UTC
From: john.tant@exchange.com
Message-ID: <2d.2234.594.0N85073D@exchange.com>
Source record: 117299

>Message-ID: <1994Jun15.144631.19774@kd4dts.atl.ga.us>
>Newsgroup: rec.radio.amateur.homebrew
>Organization: kd4dts

>Wouldn't it be easier to put some kind of electronic perimeter fence (las
>capacitive, siesmic) and just go tearing out there with you Uzi in hand,
>instead? With the constraints you've placed on the transmitter, current
>technology is not going to be cost effective. Another option may be to
>use some kind of infrared cameras and a VCR. Only problem with this is
>that sheep are going to show up. Maybe wire a couple of the sheep with
>5 pounds of C-4 with a radio receiver, and if the carrier ever drops,
>*KABOOM*. No more sheep, no more sheep rustler...

Ewe ought to be ashamed of yourself.

That's a really baaaa-d idea.

Of all the sheep theatrical tricks!

John

BTW, iaw section 97, wouldn't the sheep have to be licensed? Should be
no problem, especially with the no-cud license!

gnorph! snicker!!

---
* WR # 365 * This is a tagline?

1556. PLANS FOR PACKET MODEM

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 09:21:00 UTC
From: john.tant@exchange.com
Message-ID: <2d.2235.594.0N85073E@exchange.com>
Source record: 117300

>Message-ID: <01HDKLHX2RNQ002R8O@BEACH.UTMB.EDU>
>Newsgroup: rec.radio.amateur.homebrew
>Organization: ucsd usenet gateway

>I know that someone posted a similar request for plans for a homebrew pac
>modem the other day. I someone does have plans or an FTP site with plans
>could you send me a carbon copy or email.

>Also could you recommend software to use with it, or will any communicati
>work with it (ProComm,SmartComm,etc.)?

>TNX
>Bren
>KC5GWA
>BDORECK@BEACH.UTMB.EDU

Bren,
I have used ProComm/win and dos for packet in the past. Right now, I'm
using SmartComm/mac. They work just fine and take about 2 minutes to set
up the data rate, etc.

GL,

John

---
* WR # 365 * This is a tagline?

1557. Laser or microwave digital communication

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 13:21:51 UTC
From: d2bjorn@dtek.chalmers.se
Message-ID: <2u6phf$mfa@nyheter.chalmers.se>
Source record: 117295
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I am interested in wireless communication for networking to a building ca 500 meters away. I have seen the "Multi Megabaud Microwave Link"-project in ARRL's handbook, and find it most interesting. Has anyone on the net actually built one?

The alternative, as I've understood, is setting up a laser link. How hard is such a beast to build? Has it been done? What kind of costs are we talking about?

I have heard rumours that the ARRL handbook project it is due to be (or has already been) updated from 2 Mbits to 10 Mbits. I have only looked into the '93 version, so I wonder if this is true?

Finally, are there any other ways, not necessarily as fast? Preferrably not "ordinary" radio, because frequencies are hard to get.

Suggestions anyone?

/Mikael G Bj|rn, Chalmers University of Technology

1558. IMPATT Diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 13:51:27 UTC
From: nygren@tecnet1.jcte.jcs.mil
Message-ID: <9406211341.AA20096@tecnet1.jcte.jcs.mil>
Source record: 117296

Hi, I'm trying to locate a source for some IMPATT Diodes, specifically the parts listed below. I have searched for these diodes through every source I know. Apparently NEC no longer makes them, and I have not found anyone with a stash of them, or something that can replace them. If you can help, let me know.

NEC IMPATT Diodes

ND8P08-5G (1 Watt)
ND8S08-5H (2 Watt)

Thanks ..... Dan Nygren

nygren@tecnet1.jcte.jcs.mil

1559. Re: FM TX modules desired

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 14:32:31 UTC
From: wrb@ccsitn.cb.att.com
Message-ID: <Crr4E7.H9B@nntpa.cb.att.com>
Source record: 117297

In article <1994Jun21.140442.24934@dg-rtp.dg.com>,
Mike Harris <harrism@aquila.rtp.dg.com> wrote:
> I am looking for a source of FM transmitter modules and would
> appreciate any input.
>
> 1) Should be fairly stable frequency wise - the cheap BAXXX?
> FM transmitter kits aren't adequate.
>
> 2) Selectable frequency prefered - VFO or synthesized prefered
> though crystal would probably be acceptable. Frequency wouldn't
> be changed often so diode programmign would be acceptable.
>
> 3) Low power (QRP) is all that is required - Part 92/93? levels
> are adequate.
>
> 4) Stereo as an option.
>
> Options I'm aware of:
>
> Ramsey has a ~$100 transceiver kit that might be adequate though
> I don't need the PA nor the receiver. Has anybody built this kit?
>
> Somebody has a transceiver "brick" that I've heard advertised in
> QST, etc, but haven't been able to find info on. Something that
> was designed for wireless hand held data entry terminals but found
> ham applications? I'd appreciate any leads on this component.
>
> I'd appreciate comments on these as well as any other options you
> may be aware of.
>
> thanks, Mike Harris

Check out alt.radio.pirate. There is a company called Panaxis that
supposedly offers very high quality kits that might fit the bill.

--
Wally Blackburn Clinton-Gore - Socialist Leadership
wrb@ccsitn.cb.att.com for the 90s!
Amateur Radio Station AA8DX I'm the NRA.
'91 FXR DoD #1375

1560. Re: Square transmission lines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 16:06:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <21JUN199411062435@pavo.concordia.ca>
Source record: 117298

In article <1994Jun20.202248.28363@galileo.cc.rochester.edu>,
BILLY@urhep.pas.rochester.edu (Bill VanRemmen) writes...
>Could someone clue me in to the formula for calculating the characteristic
>impedance of a coaxial transmission line with a square shield, ie the cross
>section looks like...
>
> +-----------------+
> | |
> | |
> | O |
> | |
> | |
> +-----------------+
>
>That's a round center conductor there (ie brass tubing). Possible uses for
>such a bird would be 1) a directional coupler made out of scrap PC board and a
>piece of wire or tubing or 2) a tapered-line matching section if one tapers the
>width of the shield...
>
> -Bill VanRemmen, KA2WFJ

>
An empirical approximate for this type of calculation is to do the calculation
for a round cable but multiply the diameter by a factor of 1.2. This comes
pretty close in practice. The formulae for the round cable calculations can
be found in any electomagnetics textbook. Also, the ARRL handbook has a little
blurb on helical resonators which also touches on the topic.

1561. Re: up-conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 20:12:21 UTC
From: fcr@ll.mit.edu
Message-ID: <1994Jun21.201221.27728@ll.mit.edu>
Source record: 117301

In article <1994Jun18.113453.1@ccsvax.sfasu.edu> f_speerjr@ccsvax.sfasu.edu (James Speer) writes:
>Yet another dumb question from a boatanchor era ham trying to enter the late
>20th:
>
>I notice modern HF receivers (or at least the one I just ordered from Index
>Labs) use UPconversion. The IF in the Index Labs unit, for example, is 50mhz.
>This clerly creates a favorable image ratio, but in former times would havee
>been rejected because a) it's hard to generate IF selectivity at that
>frequency, and the alterative of filtering at AF has its own problems, and b)
>it's hard to do needed, stable amplification at that frequency.
>

The biggest advantage in up-converting to the first IF is that you can design a general coverage receiver with at least the first IF outside of the frequency coverage, and a single low-pass filter is all that is needed for IF image rejection (more filters are needed for IM rejection though). General coverage is very important in todays market.

The selectivity is not as much of an issue as it used to be because of (relatively) low cost crystal and SAW filters at the high first IF frequency. The amplifiers at 50MHz are not too much of a problem.

There has been a lot of progress in building low-cost high-volume high-frequency amplifiers and filters in the last 10 years with the booms, first in satellite receivers, then in cellular and cordless phones.

Frank Robey
fcr@ll.mit.edu

1562. Ham/Macintosh BBS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 23:06:00 UTC
From: peterd@cais2.cais.com
Message-ID: <2u7roo$inr@sun.cais.com>
Source record: 117308

Gallery's BBS moved to a new phone number at 202-298-6009.
We feature Macintosh shareware for ham radio and other general use
files for the Mac.The system is free and all callers are welcome.No
download/upload ratios or any other restrains.
Settings are standard modem ones and it supports calls up to 9600 bd
Thanks for reading this and hope to see a few more users logging in..
73's de Paulo,N3MGA
paulot@cais2.cais.com

1563. Relays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-21 23:09:39 UTC
From: tom_boza@ccm.hf.intel.com
Message-ID: <2u7sll$442@chnews.intel.com>
Source record: 117302
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.antenna,intel.ham-radio

Can anyone tell me where I might find (purchase cheaply) some 12-24 VDC
relays that I can use to switch in/out my 2m and 70cm antenna preamps?
I need to take the premaps out-of-line before transmitting. They need to
operate at 145 and 443 MHz with minimum signal lost and capable of handling
150 watts of RF output power. I perfer PC mount type so I can mount them inside
the preamp bud box. Coaxial relays (Dowell or TohTus) are big and require coax
connectors.

Thanks, Tom WB7ASR...

tom_boza@ccm.hf.intel.com

1564. 4-1000 Homebrew Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 00:33:01 UTC
From: ells22@aol.com
Message-ID: <2u80rt$c1n@search01.news.aol.com>
Source record: 117303

Anyone have experience with using a passive grid at HF in a 4x1000 AMP? The plan is to have 600 volts of Screen voltage, roller coil in the Pi Net, and (hopefully) 50 Ohm, 100 watt grid to ground resistor. I plan to run the amp in AB1 to AB2 just touching the grid current point. 4000 volts on the plate. Any help or suggestions? 1.8 to ? Mhz coverage, 1500 solid,cool watts out.

1565. Re: PCB layout software for PC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 01:46:04 UTC
From: kors@netcom.com
Message-ID: <korsCrrzKt.J7G@netcom.com>
Source record: 117304

```
: There's a fully functional (although of limited capability; I've
: forgotten what the limits are) demo of PADS available. I haven't
: figured out how to do auto placing and/or auto routing from a schematic
: yet, but manual placement and routing seems to work well.

Can you tell me if there is a FTP site that has PADS demo available?

Dick Kors
km6ep
kors@snetcom.com
```

1566. Re: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 01:57:03 UTC
From: kors@netcom.com
Message-ID: <korsCrs034.Jwy@netcom.com>
Source record: 117305

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: In article <CroIo3.DG6@rahul.net>, Mike Lyon <mlyon@rahul.net> wrote:
: >well i am trying to design a L.O for 1.2, 1.3, 1.4, 1.5 ghz. i don't
: >think i can do it with crystals (but if anyone thinks i can i would love
: >to hear from you on how i could do it :). so my idea was to build the
: >oscilator with the good old caps and inductors (feedback type). the thing
: >is though is the fact that i can't find any formulas and schematics on
: >how to build one. i have a schematic for a 2 ghz L.O but it doesn't have
: >any formulas to figure out the components values. so my question is for
: >you experts is do you guys or gals have any schematics,formulas or
: >anything of that nature you could either post or e-mail to me? any light
: >on this subject would be greatly appreciated.

Look at the July 1989 issue of QST for the description of the kind of oscillatorthat I've got going at 1.5 G. The oscillatior works great, stable and no
start-up problems. The references are expecially helpful

Good luck,

Dick Kors
km6ep
: >

1567. G-10 CIRCUIT BOARD?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 04:20:39 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <Crs6qF.MDG@rahul.net>
Source record: 117309

i was wondering if anyone out there has any idea where i could pick up
some g-10 type circuit board.any help would be appreciated.

thanx,

mlyon@rahul.net
--
Mike Lyon <mlyon@rahul.net>

1568. Re: Cavities

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 06:05:02 UTC
From: nx7u@aol.com
Message-ID: <2u8kae$j7n@search01.news.aol.com>
Source record: 117306

with respect to Q of cylindrical cavities...
I can answer your questions next week (I'm away from home now). Do
you need text references or the answer itself?
Scott nx7u@aol.com

1569. Re: 4-1000 Homebrew Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 06:08:05 UTC
From: nx7u@aol.com
Message-ID: <2u8kg5$j9l@search01.news.aol.com>
Source record: 117307

In article <2u80rt$c1n@search01.news.aol.com>, ells22@aol.com (ELLS22) writes:

>Anyone have experience with using a passive grid at HF in a 4x1000 AMP?

Meaning, I think, no tuned circuit on the input (grid)...
For AB1, it's ok. However, if you ever draw any grid current (class AB2 or B or C), gotta use that tuned input. Just a Q of 2 or 3 will do. But the dudes at EIMAC say for no grid current/no drive power, passive grid ok.
scott nx7u@aol.com

1570. Re: Cavities

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 10:45:59 UTC
From: elendir@enst.fr
Message-ID: <2u94p7$gbg@cismsun.univ-lyon1.fr>
Source record: 117311

NX7U (nx7u@aol.com) wrote:
: with respect to Q of cylindrical cavities...
: I can answer your questions next week (I'm away from home now). Do
: you need text references or the answer itself?
: Scott nx7u@aol.com

Well, the answer is okay, but since I am always interested in finding more,
text references would be great also !

Always curious,
Vince, F1RCS

1571. Connecting frequency counter help needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 11:02:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <22JUN199406023375@vax2.concordia.ca>
Source record: 117310

I have an old receiver (tubes, .5-30 MHz) with analog tuning.
I also have a frequency counter which I want to connect so
as to be more accurate in determining the frequency I am
receiving. Where in the receiver circuit would I connect
the counter (output:of 1st RF amp? 2nd RF amp? IF? 1st
converter? 2nd converter? IF buffer? 1st, 2nd, or 3rd IF
amp? detector?) Or is there some miracle way to pick up
RF from the receiver with an antenna without having to make
a mod. Any help would be appreciated.
Thanks,
Jack

1572. Re: Connecting frequency counter help needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 15:03:53 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <2u9jsp$krs@hobbes.cc.uga.edu>
Source record: 117312

In article <22JUN199406023375@vax2.concordia.ca> hirschj@vax2.concordia.ca (JACK HIRSCHBERG) writes:
>I have an old receiver (tubes, .5-30 MHz) with analog tuning.
>I also have a frequency counter which I want to connect so
>as to be more accurate in determining the frequency I am
>receiving. Where in the receiver circuit would I connect
>the counter (output:of 1st RF amp? 2nd RF amp? IF? 1st
>converter? 2nd converter? IF buffer? 1st, 2nd, or 3rd IF
>amp? detector?) Or is there some miracle way to pick up
>RF from the receiver with an antenna without having to make
>a mod. Any help would be appreciated.
>Thanks,
>Jack

The IF will always be 455 kHz (or some other fixed frequency),
so there's no point in measuring it.

The incoming RF will be too weak, and you don't want to take any
of it away. Anyhow, you'll be measuring several signals at once
(at frequencies close to each other) if you measure at an RF stage.
The IF stages pick out the exact one you're tuned to.

Measure the oscillator, and subtract 455 kHz from the reading.
Thus, when you are tuned to 10.000 MHz, the counter will read 10.455.

The really proper way to do it is to build a counter that will automatically
subtract 455 from the number to be displayed -- for example, by starting
at 999545 rather than at 000000 on each count.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1573. Re: G-10 CIRCUIT BOARD?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 15:19:55 UTC
From: tomb@lsid.hp.com
Message-ID: <Crt197.L28@hpcvsnz.cv.hp.com>
Source record: 117313

Mike Lyon (mlyon@rahul.net) wrote:
: i was wondering if anyone out there has any idea where i could pick up
: some g-10 type circuit board.any help would be appreciated.

I think G10 has been entirely replaced by FR4; they should be equivalent unless you particularly do not want fire resistance. You should be able to find surplus board material at many surplus places; see ads in "Electronics Now" for example (their expanded ad section appears only once every three or four months)

73, Tom -- K7ITM

1574. Mica HV Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 16:01:37 UTC
From: raym@omnifest.uwm.edu
Message-ID: <2u9n91$b62@omnifest.uwm.edu>
Source record: 117315

Cleaning out the shack and found a bunch of high voltage mica caps. They
range from .01MFD to .0005MFD. Voltage range from 1200 volts to 5KV.
All you builders out there, email your needs and I'll see if I can match
them up. I picked these up at hamfests over the last 20 years and always
refused to pay more than 50 cents each so that's what I'll let them go for.
Plus shipping of course. Email: raym@omnifest.uwm.edu Ray WB9ZIQ
###

1575. Re: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 16:51:15 UTC
From: jernandez@pbs.org
Message-ID: <jernandez-220694115115@jernandez.pbs.org>
Source record: 117316

In article <CroIo3.DG6@rahul.net>, Mike Lyon <mlyon@rahul.net> wrote:

Mike,

Building an L band oscillator using an LC network is not an approach you should take. There are various schemes for generating RF at these frequencies. One, tried and true approach is to design an oscillator at a lower frequency (let's say a 5th overtone at 100 MHz). After the oscillator, you would place a set of multipliers. These mults. could be BJT transistor type of X2 or X3, or the mult. could be an SRD type and you can filter the frequency you desire. These are standar techniques which have been used by me and others. In fact the beacon transmitter on the Telstar 4 spacecraft is designed in this way. (I had a hand in the box in a previous life).
A second approach would be to use a Dielectric Resonator Oscillator right at L band . Check Microwave Engineering by Pozar for design equation. This approach will require some good microstrip skills and access to a microwave board layour program.
If you have other questions I will try and help.

--
John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

1576. DROP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-22 19:48:00 UTC
From: t.smith@cccbbs.cincinnati.oh.us
Message-ID: <1.569.uupcb@cccbbs.cincinnati.oh.us>
Source record: 117314

```
-- Jabber Control Message --

---
. JABBER v1.2 .
```

1577. Re: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-23 14:18:59 UTC
From: zlau@arrl.org
Message-ID: <1994Jun23.141859.27197@arrl.org>
Source record: 117322

John J. Ernandez KA2YAP (jernandez@pbs.org) wrote:

: A second approach would be to use a Dielectric Resonator Oscillator right
: at L band . Check Microwave Engineering by Pozar for design equation. This
: approach will require some good microstrip skills and access to a microwave
: board layour program.

Actually, even for X band, where the tolerances get more difficult,
perfectly acceptable boards from an electrical viewpoint can be
made using dial calipers and sharp knife to remove "Scotch tape"
resist in just the right places with *lots* of patience. I happen
to have a few examples.

The difficulty with DROs seems to be finding a place to buy small
quantities of the resonators.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1578. HP 5360 "interpolator" info wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-23 14:53:45 UTC
From: kbanke@qualcomm.com
Message-ID: <kbanke-230694065345@kbanke.qualcomm.com>
Source record: 117346

I am trying to keep a couple of HP 5360 computing counters operating for
Ham Radio uses but a common problem over time seems to be the
"interpolator" module for which the technical manual gives no information.
I suspect 20 years ago the technology was proprietary and the info was not
publicized. Does anyone have a schematic or other info on this module?
Any help would be greatly appreciated.
- Kerry N6IZW 619-462-2220 kbanke@qualcomm.comm -

1579. new HAMCOM interface with optical isolation

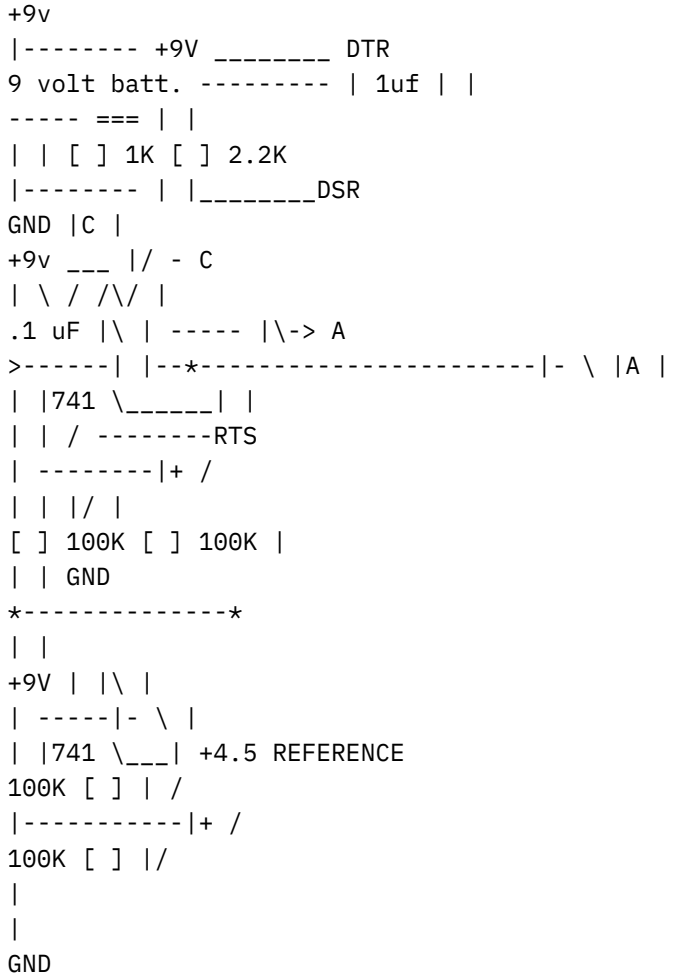
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-23 15:09:39 UTC
From: copeland@metronet.com
Message-ID: <CruvG3.563@metronet.com>
Source record: 117317

Here are two opto circuit I've been playing with for HAMCOM/JVFAX.
They virtually eliminate all computer induced rfi. I've been using
a five foot serial cable and twenty foot audio cable with this
circuit and the results are truly remarkable with JVFAX.

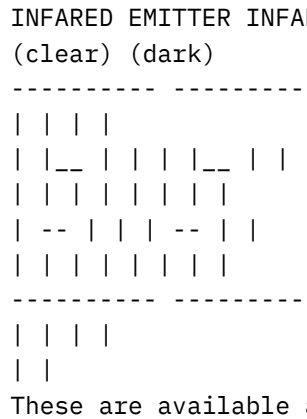
I've used the first circuit successfully, but recommend using the second.
The first can be built with common Radio Shack parts. The second requires
a little more uncommon LM358 and TIL181. The Radio Shack opto RECEIVER
is only rated at 20v but used at 24v and could eventually burn out.
It also may introduced problems since the +9v is not regulated and induces
error into the reference op amp output ... even though it seems to work well.

Perhaps some engineers out there may have some advice.

==========



==========

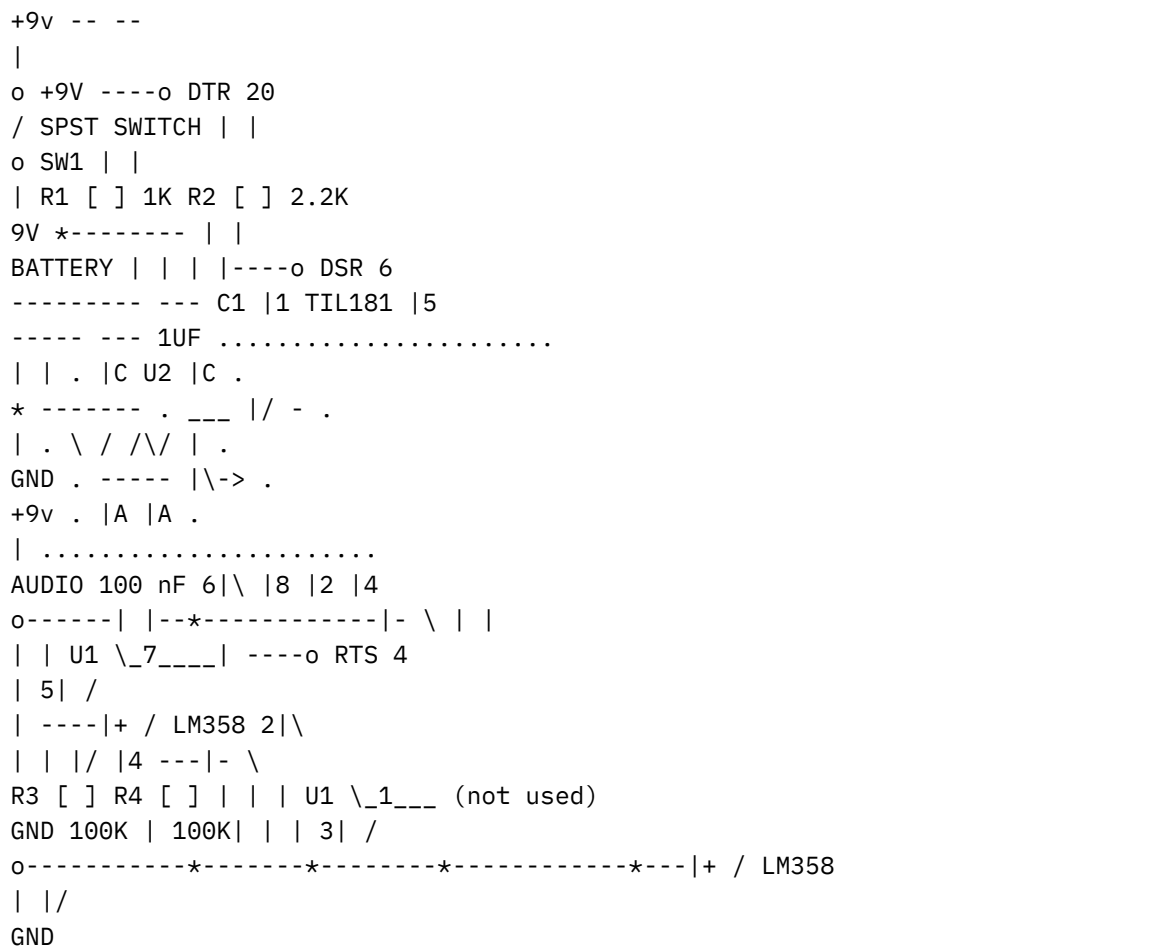


These are available at Radio Shack as a pair for $1.99 (#276-142).
This shows which is the Anode and which is the Cathode, not clear on
the package.

The LED and DETECTOR must be positioned right up against each other and
exactly aligned to get maximum light transfer. The sides with the little
lense like dots must be placed together.

==========

I'd recommend this second circuit for more stability and possibly accuracy.



```
================================================================================
| ** NOTE** |
| After constructing, measure LM358 pin 7 with no audio on the input. |
| It should be high (~8v), if it is low (~0v) it will drain the battery |
| in only 20 hours or less. |
| |
| To correct this: Disconnect R1 from +9v and reconnect to U1 pin 7. |
| Disconnect U1 pin 2 and reconnect to GND. |
| |
================================================================================
```

The LM358 is a single supply opamp and can be substituted with the LM2904, LM158, or LM258. (The dual supply 741 can not be used as a substitute.)

The opto isolator IC can be substitued for many other types. The 4N35 has been tested successfully. The discrete infared emitter/detector from Radio Shack has been tested successfully.

I tried to use a darlington opto (TIL113), but couldn't get it to work. A darlington opto circuit would only require 1.5ma average. That would make battery life about 133 hours. Maybe I'll try again later.

```
================================================================================
```
MORE NOTES:

The 9v battery could be substitued with a 9 or 12 vdc adapter. However I've found the clearest pictures occur when both the radio and HAMCOM are running off batteries ... at 6am 8).

A 9v battery should last about 50 hours while audio is present (assuming 200ma hours for a battery). If no audio is present the battery will last 400 hours.

The battery life could be a problem for people who leave HAMCOM running all night using the timed FAX option. Battery would only last a week.

If you have any advice or knowledge that could improve this, please let me know.

copeland@metronet.com

```
--
------------------------------------------------------------------------
| copeland@metronet.com |
------------------------------------------------------------------------

--
------------------------------------------------------------------------
| copeland@metronet.com |
------------------------------------------------------------------------
```

1580. JDR Microdevices

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-23 20:33:28 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jun23.203328.13889@galileo.cc.rochester.edu>
Source record: 117318

Has anyone else noticed that JDR seems to have picked up lots of neat lines? I was just flipping through their electronic components catalog and they've got about 6 pages of kits, including a 2m xcvr for $150. Case is extra (like I want a naked board...).

They've also got a pretty good selection of IC's including the MC1350 IF amp and the NE602... visible laser diode... cases...

Phone is 408-494-1400.

I don't work for them and I don't advertise for them. I DEFINITELY don't vouch for them. Just thought y'all might be interested...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.
++
In nature, stupidity gets you killed.
In the workplace, it gets you fired.
In politics, it gets you re-elected.
++

1581. Collapsable antenna sources sought

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 04:23:53 UTC
From: tew+@cs.cmu.edu
Message-ID: <2udn4p$oaj@casaba.srv.cs.cmu.edu>
Source record: 117321
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I'm looking for a source of collapsable antennas approximately 40-50" long extended, about 5"-7" long collapsed, such as might be found on a small walkie-talkie or transistor radio.

Radio Shack sells a decent assortment, but all their longer antennas are 8-12" long when collapsed, and their small collapsed antennas are under 24" long when extended.

Anyone know where I could find an assortment of different sized collapsable antennas? Neither Allied Electronics nor Quement nor Digikey nor Jameco nor Unicorn nor JDR seem to carry them, nor do surplus dealers such as Marlin P. Jones, nor Hosfelt, nor Fair Radio Sales.

I'm trying to beef up the antenna on a Radio Shack FM walkie-talkie that I've retuned for 6 meters (this is the small, single-channel crystal-based one). I'd rather increase my antenna length (and radiate more signal horizontally) than simply boost the power output since the batteries in those things are so small.

Any ideas?
-Tom
tew+@cs.cmu.edu

1582. Re: Ham/Macintosh BBS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 06:40:54 UTC
From: richard@mole.demon.co.uk
Message-ID: <OLN00AA303076@mole.demon.co.uk>
Source record: 117319

In article <2u7roo$inr@sun.cais.com>, peterd@cais2.cais.com (peterd) wrote:

>Gallery's BBS moved to a new phone number at 202-298-6009.
>We feature Macintosh shareware for ham radio and other general use
>files for the Mac.The system is free and all callers are welcome.No
>download/upload ratios or any other restrains.
>Settings are standard modem ones and it supports calls up to 9600 bd
>Thanks for reading this and hope to see a few more users logging in..

Just wish you had a local (UK) phone number :-)

1583. RE: ANIMAL TRACKING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 06:41:01 UTC
From: richard@mole.demon.co.uk
Message-ID: <OLN00AA30307D@mole.demon.co.uk>
Source record: 117320

In article <2d.2234.594.0N85073D@exchange.com>, john.tant@exchange.com (John Tant) wrote:

>Ewe ought to be ashamed of yourself.
>
>That's a really baaaa-d idea.
>
>Of all the sheep theatrical tricks!
>
>
>
>John
>
>BTW, iaw section 97, wouldn't the sheep have to be licensed? Should be
>no problem, especially with the no-cud license!
>
>
>gnorph! snicker!!

Well, if that's the tone of the reply, I'll tell everyone that I thought we'd baa-code them.

1584. Re: JDR Microdevices

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 14:47:37 UTC
From: rapw20@email.sps.mot.com
Message-ID: <1994Jun24.144737.632@newsgate.sps.mot.com>
Source record: 117323

In article <1994Jun23.203328.13889@galileo.cc.rochester.edu>
BILLY@urhep.pas.rochester.edu (Bill VanRemmen) writes:
> Has anyone else noticed that JDR seems to have picked up lots of neat lines?
I
> was just flipping through their electronic components catalog and they've got
> about 6 pages of kits, including a 2m xcvr for $150. Case is extra (like I
> want a naked board...).
>
> They've also got a pretty good selection of IC's including the MC1350 IF amp
> and the NE602... visible laser diode... cases...
> ...
I've ordered parts from JDR a few times. They do seem to have some stuff that's
hard to find elsewhere.

The kits are Ramseys.

For what it's worth...

73... Mark AA7TA

1585. Newcomer to Radio looking for advice

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 15:03:47 UTC
From: rhofmann@nynexst.com
Message-ID: <2ueskj$h23@news.nynexst.com>
Source record: 117326

Hi everyone. I'm a newcomer to the world of home-built transmitters/receivers and I have a few things I'd like to ask of the collective net-wisdom. My interest in this group stems from the desire, as sort of a summer project perhaps, to build some sort of a short range transmitter/receiver that I could perhaps use to link 2 computers together at school via a null modem type connection perhaps. I don't have very much experience with radio in particular, but I will be going into my senior year as a physics major and I have had at least an overview of electronic devices and circuits. What I'm wondering is:

- Is this a feasible project to undertake?
- If so, where might I find plans/designs to work off of in constructing such a device?
- What frequency bands if any would I legally be able to make use of?
- What frequency bands and how much power would I need in order to transmit reliably within a dormitory for example (cinder block walls, max distance of maybe 500 feet)

Any information that might help would be appreciated. Reply via postings or email.

--
Bob Hofmann

rhofmann@darwin.cc.nd.edu University of Notre Dame
rhofmann@nynexst.com NYNEX Science & Technology

1586. Re: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 16:39:57 UTC
From: glenne@n6gn.sr.hp.com
Message-ID: <CrwuAn.Exo@srgenprp.sr.hp.com>
Source record: 117324

Mike Lyon (mlyon@rahul.net) wrote:
: well i am trying to design a L.O for 1.2, 1.3, 1.4, 1.5 ghz. i don't

Mike,

You might be interested in the 1010 MHz coaxial/troughline oscillator
I showed in my microwave station design series in Feb/Jun/Oct 1988
Ham Radio Magazine. Although the series describes construction of the
halfwave line version, I also refer to a quarterwave line version which
is very similar. This allows mechanical tuning with a telescoping center
conductor made from hobby store brass tubing and the ones I built would
tune from .8 to 1.2 GHz or more. This oscillator provides low phasse noise
along with wide (mechanical) tuning range. If you are looking for multiple
precision oscillators, you might easily build several of these and lock
each to a different line of a 50 MHz reference as the articles shows (using
a 100 MHz phaslocked VCXO).

I used the phaselocked 1010 MHz oscillator to in turn lock up a 10100 MHz
oscillator for 10,368 MHz SSB. The resulting performance and phase noise
was quite acceptable and is also shown in the series.

Glenn Elmore n6gn

amateur IP: glenn@SantaRosa.ampr.org
Internet: glenne@sr.hp.com

1587. need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 17:21:10 UTC
From: achien@lsil.com
Message-ID: <2uf4m6$7h5@lsi.lsil.com>
Source record: 117325

I am looking for information on how to design a "Helical filter" . Any books, papers or design equations available for this kind of filters? I know "TOKO coil" make this kind of filters but I need to custom design my own filter.

Arthur Chien

1588. Re: JDR Microdevices

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 17:49:13 UTC
From: hunter@s07.es.llnl.gov
Message-ID: <2uf6ap$642@lll-winken.llnl.gov>
Source record: 117327

The new JDR kits are the same price and have the same part numbers as the Ramsey kits. Interesting coincidence.

Steven Hunter

1589. 49MHz walkie talkies lega

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 19:18:00 UTC
From: richard.dale@sound.com
Message-ID: <6b.1008.5882.0N8D63B8@sound.com>
Source record: 117333

AU>don't want to lose it. Can a 49MHz walkie talkie(runs from a 9v battery)
AU>be converted to run on other bands, such as 440, legally? I thouhtabout
AU>changing the crystal and antenna to the frequency I want. Please do not

Legally, yes. Easily, no. You're looking at moving a cheap
piece of equipment almost 400 MHz. That's akin to converting
a Radio Shack Flavoradio to pick up TV.

Say you spend $20 for a pair of those units. Figure on spending
at least another $50-$100 in attempting to convert them over.
Then look at Ramsey's catalog -- a five-watt, 12-channel 440 MHz
unit for $149.95 (less case).

I've heard of people moving those units up to 6 meters with varying
degrees of success, though.

The best I've heard is some guy who mounted one up on a tower and
operated it by remote control with his shack. He had worked
six states when I read the article.

1590. Connecting frequency coun

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 19:27:00 UTC
From: richard.dale@sound.com
Message-ID: <6b.1009.5882.0N8D63B9@sound.com>
Source record: 117332

```
HA>I have an old receiver (tubes, .5-30 MHz) with analog tuning.
HA>I also have a frequency counter which I want to connect so
HA>as to be more accurate in determining the frequency I am
```

If you know how to get in touch with the International Radio Club
of America (IRCA), they had a group of members who did something
similar back in the mid 70s. They would get really good
accuracy, often to the point of being able to ID a station
simply by its frequency. IRCA has a reprint service, and that
info should be available. I don't have their address, but it
should be in the WRTH.

1591. Re: JDR Microdevices

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 20:09:45 UTC
From: jra1854@tntech.edu
Message-ID: <jra1854.1122876225A@news.tntech.edu>
Source record: 117328

In Article <1994Jun23.203328.13889@galileo.cc.rochester.edu>,
BILLY@urhep.pas.rochester.edu (Bill VanRemmen) wrote:
>Has anyone else noticed that JDR seems to have picked up lots of neat lines? I
>was just flipping through their electronic components catalog and they've got
>about 6 pages of kits, including a 2m xcvr for $150. Case is extra (like I
>want a naked board...).

Those kits are from Ramsey Electronics. The performance of the completed
kits is, ummm, less than optimal. For example, when QST reviewed the 2m
xcvr they found that the transmitter did not meet FCC spurious emission
specifications. You get what you pay for....

Jeff, k9ja

1592. Re: JDR Microdevices

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-24 21:45:02 UTC
From: CecilMoore@delphi.com
Message-ID: <2ufk4u$kej@chnews.intel.com>
Source record: 117329

In article <jra1854.1122876225A@news.tntech.edu>,
Jeffrey Austen <jra1854@tntech.edu> wrote:

>For example, when QST reviewed the 2m (Ramsey)
>xcvr they found that the transmitter did not meet FCC spurious emission
>specifications. You get what you pay for....Jeff, k9ja

Hi Jeff, you forgot to say that two ten cent caps solve the problem and
I'm sure those caps are included in the Ramsey FX kits by now.

73, KG7BK, OOTC, CecilMoore@delphi.com

1593. Re: need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-25 05:16:24 UTC
From: monta@image.mit.edu
Message-ID: <MONTA.94Jun25011625@image.mit.edu>
Source record: 117330

achien@lsil.com (Arthur Chien - 4582) writes:

> I am looking for information on how to design a "Helical filter".
> Any books, papers or design equations available for this kind of
> filters? I know "TOKO coil" make this kind of filters but I need to
> custom design my own filter.

VHF/UHF Handbook, by Jessop, has a good description of helical
filter design; the ARRL Handbook also has a section on them.
Zverev's classic filter design book has a very interesting
chapter on resonators of various sorts, including helicals
at VHF and HF.

I recently ran across a book, whose title escapes me (from
Artech House?), specifically about helical filters and how
to avoid 3\lambda/4 spurs and other annoyances. The author
advocates using a coil with a sense reversal partway along it.

Peter Monta monta@image.mit.edu
MIT Advanced Television Research Program

1594. PADS and single-point grounds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-25 17:57:26 UTC
From: haymoree@newt.ee.byu.edu
Message-ID: <2uhr66$fsi@bones.et.byu.edu>
Source record: 117331
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I've been trying to get the shareware PADS to bring all grounds in my circuit into a single point, without success. I don't seem to have any control over which pins have the physical connections -- I can connect all grounds to a single point on the schematic, but when it's imported into PADS-PCB, that information is lost and PADS re-connects the pins in a daisy-chain format.

Any suggestions?

--
Ed Haymore | AA6EJ
ed@byu.edu | Try not. Do. Or do not. There is no try.

1595. HELP: Audio problems in Yaesu FT727R HT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-26 21:54:56 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <2uktfg$ctf@bronze.lcs.mit.edu>
Source record: 117335

I've a problem with a Yaesu FT727R HT I recently brought back to service. It has intermittently lost its audio. When I first turned it on after repairs, the radio made a brief motorboating sound, then the audio seems to cut out (radio CPU still works and the Busy light still indicates open squelch). There *is* audio when this happens, but it's *very* faint. There is a tone board (Yaesu's) installed, and it is also nonfunctional (radio just beeps when I try to invoke the encoder).

The first time this happened, I was able to turn the radio off and on and normal audio would come back (tone board still didn't work). Now after several hours of this, the audio does *not* return.

A month ago, I experienced these symptoms and replaced the audio output transistor, a 2SB772; a new transistor is in place now, but the problem persists. I have a thought that perhaps the fault is killing the transistor; I hope not. The tone card might be squelching the audio, since it supports tone decode as well as encode.

This is an old HT, and has been under repair several times. I'm reaching the point of no return, but would really appreciate any advice on this, especially from 727 owners (_besides_ "Buy a new radio!" :)).

Thanks and 73's, Dave, N1KGH

--
| David Moisan, N1KGH /^_/^\ moisan@silver.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

1596. 28Mhz PLL Source Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-26 21:57:40 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Jun26175740@splinter.coe.neu.edu>
Source record: 117334

Hi:
Does anyone know of a PLL (part #, and source for it) that will work
at 28Mhz? I am working on a Rx design, and I need a low cost part. Thanks!

-Dean

1597. Realistic (RS) scanner mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 04:05:42 UTC
From: heiss@ualr.edu
Message-ID: <1994Jun26.220542.1@eivax.ualr.edu>
Source record: 117336

Hi ALL:
I have a Realistic PRO-2023 programmable scanner. I would like to modify
it for operation on 6, 10, 12, ... meters. I think 6 and 10 should be
fairly easy since it's right on the edge, I'm not sure about the rest.
Anyone recommendations would be appreciated.
thanks--

****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail heiss@ualr.edu
call: KC5CVL
****

1598. Re: PADS and single-point grounds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 12:09:50 UTC
From: pvr@wang.com
Message-ID: <Cs21sF.G84@wang.com>
Source record: 117337
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

haymoree@newt.ee.byu.edu (Ed Haymore) writes:

$>I've been trying to get the shareware PADS to bring all grounds in my
$>circuit into a single point, without success. I don't seem to have any
$>control over which pins have the physical connections -- I can connect
$>all grounds to a single point on the schematic, but when it's imported
$>into PADS-PCB, that information is lost and PADS re-connects the pins in
$>a daisy-chain format.

You will have to hand route your ground traces. The trick is
that you must run one ground trace over top of other ground traces.
The copper will be correct but your layout under PADS will be more
complex. What you must do is to first route the trace from the
circuit ground point to the common ground point. Next, continue
from the common ground point to the point that PADS connected the
ground. This will complete the routing and make PADS happy. The
trace should be routed on top of the previous trace going to that
circuit ground.
How you draw the circuit has no bearing on how the netlist is
created. The netlist is only electrically correct. It is only
the netlist that controls how the routes are run.
Pete.
--
-->>>>>>>>>> Peter Reilley ..... pvr@wiis.wang.com ..... KA1LAT <<<<<<<<<<--
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

1599. Re: need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 16:26:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <27JUN199411263158@pavo.concordia.ca>
Source record: 117339

In article <2uf4m6$7h5@lsi.lsil.com>, achien@lsil.com writes...
>I am looking for information on how to design a "Helical filter" . Any books, papers or design equations available for this kind of filters? I know "TOKO coil" make this kind of filters but I need to custom design my own filter.
>---
>Arthur Chien

Info on this type of filter is somewhat hard to find but I have spent *more* than a little time searching so I think I can save you some time. Got a pen ?

As usual, the ARRL handbook touches on the subject.
Handbook of Filter Synthesis, A.I. Zverev ISBN 0-471-98680-1
Reference Data for Radio Engineers, Howard Sams (pre-seventh edition)
Filters with Helical and Folded Helical Resonators, Peter Vismueller
ISBN 0-89006-244-7.

There are a few more but these are the most common and should get you started. BTW, the Zverev is out of print and is hard to find except in the reference section of an engineering library (the copy at my library has been stolen by some unscroupulous filter engineer). The Vismueller book *JUST* went out of print a couple of weeks ago; at that time, the publishers had 2 copies left which go for a hefty price (something like $70 CDN -Yeowch!).

-Good luck

Mark, VE2HVW

1600. Realistic (RS) scanner mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 17:17:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E0F0AAE@msmail.uthscsa.edu>
Source record: 117338

ihnp4.ucsd.edu!agate!spool.mu.edu!news.clark.edu!netnews.nwnet.net!ns1.nodak
.ed
(Larry) writes:

>Hi ALL:
>I have a Realistic PRO-2023 programmable scanner. I would like to modify
>it for operation on 6, 10, 12, ... meters. I think 6 and 10 should be
>fairly easy since it's right on the edge, I'm not sure about the rest.
>Anyone recommendations would be appreciated.
>thanks--
>**
***
>Larry Heiss
>University of Arkansas @ Little Rock
>Laser Applications Lab
>e-mail heiss@ualr.edu
>call: KC5CVL
>**
***

I'm don't remember what the PRO-2023 was, if it is one of their programmable
scanners it is very unlikely that you can mod it to do anything.
They are controlled by a microprocessor that has the PLL frequency
generator built in. You would have to reprogram the microprocessor
to be able to make it scan other bands. The receiver itself would
have no problem with 6 meters but 10 might be a little out of its range.
If it is one of their (RS) crystal controlled units you should have no
problem with the mod, although 10 meters might be a little much to ask for
but 6 should be no problem.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources
** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

1601. GPS group purchase shutdown

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 17:26:24 UTC
From: bonomo@specxn.enet.dec.com
Message-ID: <2un240$4go@nntpd2.cxo.dec.com>
Source record: 117340

Greetings, all.

As I have not achieved critical mass in the number of orders for the Motorola GPS engines, I am shutting down the group purchase.

I am on vacation for the next two weeks. If, upon returning, there has not been enough orders received to reach the magic 100 mark, I will be returning the checks to those who have sent them to me, and discontinuing any efforts in this area. As of now, I have orders for about 35 units. For those of you interested, that's about $13,000 sitting on my desk.

Thanks for your time, efforts and wonderful interest in this matter.

Regards,

Tom Bonomo

1602. Adhesive for lawn mower resistor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 22:32:32 UTC
From: roger@wrq.com
Message-ID: <2unk20$e13@news.u.washington.edu>
Source record: 117341

(A thousand apologies if this post is grossly off-charter
for this newsgroup, but this group is the best I could
find for this question.)

I have an old Black and Decker electric lawn mower that
I recently repaired. It's all up and running, except that
there is a large (5 ohm, 20 watt, I believe) block-shaped
resistor that I need to re-attach to the side of the motor
housing. It was originally attached with an off-white,
rubbery adhesive. This adhesive isn't silicone or RTV. From
my former life as an electronics technician (MANY years ago),
I vaguely remember something called (I think) potting compound
that was used for this purpose. As I recall, this stuff not
only had adhesive properties but also could help act as a
heat sink. (Note that I'm NOT talking about the greasy, white
heat sink stuff you use when mounting such things as power
transistors.)

So, if you have any idea what it is I need to get, or if you
can tell me that it's OK to use silicone caulk or RTV as a
substitute, please let me know.

Much thanks in advance.
--
Roger Fulton
roger@wrq.com

1603. Re: need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-27 23:10:56 UTC
From: dmiller@crl.com
Message-ID: <2unma0$fdc@crl2.crl.com>
Source record: 117389

HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:

: There are a few more but these are the most common and should get you started.
: BTW, the Zverev is out of print and is hard to find except in the reference

How recent is your information? The Z book was out of print for quite some time, but they printed some more and I was able to buy one about 3 years ago... If your information is this old, look again -- If not, well maybe they are out of print AGAIN! I had to shell out about $105 though...

--

Don Miller Electronic System Products
dmiller@crl.com

1604. Re: Ham/Macintosh BBS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 04:10:27 UTC
From: paulot@cais2.cais.com
Message-ID: <2uo7rj$ma4@sun.cais.com>
Source record: 117349

heh heh,really.However,some other folks did indeed call from other
countries,like Australia and Japan...
Send me some e-mail,if u need something I might be able to help..
73's de Paulo,N3MGA-Gallery's BBS sysop.

1605. Re: PADS and single-point grounds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 13:55:06 UTC
From: tafu@lynx.dac.neu.edu
Message-ID: <2upa3q$2pg@chaos.dac.neu.edu>
Source record: 117342
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Ed Haymore (haymoree@newt.ee.byu.edu) wrote:
: I've been trying to get the shareware PADS to bring all grounds in my
: circuit into a single point, without success. I don't seem to have any
: control over which pins have the physical connections -- I can connect
: all grounds to a single point on the schematic, but when it's imported
: into PADS-PCB, that information is lost and PADS re-connects the pins in
: a daisy-chain format.

We used a ground plane instead of a point. It is the usual practice for
RF circuits. Double sided PCB's were used in our design. The ground
plane was created by copper pour in the final stage of the layout. We
always routed the PCB manually by the RF engineers. This approach works
very well.

Regards
-Tiger

1606. Re: need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 15:41:52 UTC
From: westgj@norand.com
Message-ID: <2upgc0$6r2@werewolf.norand.com>
Source record: 117343

Hi All

The Vismueller book does actully have some pratical sections, as opposed to most of my engineering texts. Glad we have Zverev already.

Don't forget the interlibrary loan option. I have yet to find a book I couldn't get for a couple of weeks. Usually at little or no charge.

Ask at the reference desk in your local library.

Guy
N0MMA
westgj@norand.com

1607. Re: PADS and single-point grounds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 17:23:21 UTC
From: lovelace@analog-design.sps.mot.com
Message-ID: <1994Jun28.172321.8668@newsgate.sps.mot.com>
Source record: 117347
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Where can I get a copy of this "PADS" program? It sounds interesting!

| David K. Lovelace 2100 East Elliot Road |
| Motorola, Inc. MD: EL368 |
| Semiconductor Products Sector Tempe, AZ 85284 |
| Analog IC Division lovelace@analog-design.sps.mot.com |
| Phone: (602) 413-5878 FAX: (602) 413-4192 |

1608. Re: need info on Helical filters design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 17:27:47 UTC
From: glenne@n6gn.sr.hp.com
Message-ID: <Cs4B6C.tE@srgenprp.sr.hp.com>
Source record: 117344

[No readable article body recovered]

1609. Re: PADS and single-point grounds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 20:50:37 UTC
From: pvr@wang.com
Message-ID: <Cs4KKE.DMu@wang.com>
Source record: 117345
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

lovelace@analog-design.sps.mot.com (Dave Lovelace) writes:

$>Where can I get a copy of this "PADS" program? It sounds interesting!

These files are available via anonymous FTP from WSMR-SIMTEL20.ARMY.MIL
(192.88.110.20) or mirror sites OAK.Oakland.Edu (141.210.10.117),
wuarchive.wustl.edu (128.252.135.4), ftp.uu.net (137.39.1.9),
nic.funet.fi (128.214.6.100), src.doc.ic.ac.uk (146.169.3.7) or
archie.au (139.130.4.6), by e-mail through the BITNET/EARN file
servers, or by uucp from UUNET's 1-900-GOT-SRCS. See UUNET file
uunet!~/info/archive-help for details.

Directory PD1:<MSDOS.CAD>

PADSLIB.ZIP B 488615 920212 PADS library for PADSPCB.ZIP and PADSLOG.ZIP
PADSLOG.ZIP B 1081636 920212 PADS Logic schematic capture CAD program
PADSPCB.ZIP B 1036461 920212 PADS PCB (printed circuit board) layout pgm

--
-->>>>>>>>>> Peter Reilley ..... pvr@wiis.wang.com ..... KA1LAT <<<<<<<<<<--
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

1610. Project Idea!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-28 23:22:58 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Jun28.232258.17449@ttinews.tti.com>
Source record: 117348

I keep looking at that Uniden 2600 with the blown final transistor...
..and I keep thinking: "How tough would it be to convert this muther
to 6 meters?" Well...let's see..a new display table in the uP's rom
so it would read "50-54" instead of "26-30", a new LO, a new mixer,
maybe keep the IF's as is...modify the mixers a bit, a new final..
..some osc in the receiver?...Hmmm??

On the other hand, why can't Uniden BUILD a 6m version of this rig??
(It cant be any more expensive than the 10m ones, 2510, 2600, 2950 etc)
..as an aside, is anyone from Uniden on the net? Are you listening? ;-)

It just KILLS me that Yaesu wants >$450 for their 6m all-mode!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

1611. 20th Eastern VHF/UHF Conference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 13:10:19 UTC
From: klimas%uhavax.dnet@ipgate.hartford.EDU
Message-ID: <9406291310.AA27994@ipgate.hartford.edu>
Source record: 117350

20th EASTERN VHF/UHF SOCIETY CONFERENCE: AUGUST 26, 27, 28, 1994
QUALITY INN & CONFERENCE CENTER
51 HARTFORD TURNPIKE
VERNON, CT 06066

8/26/94 Friday - LODGING
1600 'til ..... HOSPITALITY ROOM
8/27/94 Saturday - REGISTRATION, FORMAL TALKS & BANDSESSIONS
0800 Registration begins adjacent to the Hospitality Room
0840 TALKS BEGIN, including PAUL WADE, N1BWT: PARABOLIC DISH
DESIGN; JEFF KLEIN, WA2TEO: VHF CONTESTING STRATEGIES AND RESULTS; LARRY
FILBY, K1LPS: LOW COST 10 GHZ WIDEBAND FM GEAR; PETER TRANEUS ANDERSON,
KC1HR: DIGITAL RECEIVER DESIGN; DAVID UPTON, WB1CMG: PRACTICAL SOLID STATE
AMPLIFIER DESIGN; EMIL POCOCK, W3EP: OF THE WORLD ABOVE 50 MHZ; MORE !
1600 PREAMP NOISE FIGURE MEASUREMENT
1830 BANQUET
2000 VHF - MICROWAVE TRIVIA QUIZ: OPEN TO ALL
2100 DOOR PRIZE DRAWINGS: OPEN TO ALL
8/28/94 Sunday - SWAP MEET AND ANTENNA MEASURING STARTING AT 8 AM.

FROM THE SOUTH/WEST OF HARTFORD, TRAVEL I-84 E TO EXIT 63, LEFT OFF RAMP.
FROM BOSTON, TRAVEL I-84 W TO EXIT 64, RIGHT OFF RAMP, RIGHT @ 1ST LIGHT.

REGISTRATION AT THE DOOR WILL COST $25
PRECONFERENCE REGISTRATION BEFORE AUGUST 19, 1994 CAN BE MAILED TO:

BYRON BLANCHARD, N1EKV
16 ROUND HILL ROAD
LEXINGTON, MA 02173
(617)-862-1380 evenings

REGULAR MAIL REGISTRATIONS ____ @ $20 = _____
1ST TIME MAIL REGISTRATIONS ____ @ $17 = _____
SUNDAY ONLY REGISTRATIONS ____ @ $5 = _____

BANQUET TICKETS (BY MAIL ONLY): ROAST BEEF ____ @ $21 = _____
STUFFED SHRIMP ____ @ $21 = _____
CHICKEN CAPON ____ @ $18 = _____
TOTAL = _____

EACH REGULAR OR 1ST TIME REGISTRANT RECEIVES A COPY OF THE PROCEEDINGS.
YOU NEED NOT ATTEND THE BANQUET TO ATTEND THE PRIZE DRAWINGS / TRIVIA.
ALTERNATIVE DINING IS AVAILABLE CLOSE-BY.

OVERNIGHT RATES WHEN YOU MENTION THE EASTERN VHF/UHF SOCIETY ARE:
SINGLE: $55 DOUBLES: $64 CALL LORI TOZIER AT (800)-235-4667.
THIS INCLUDES USE OF FACILITIES (SWIMMING / ETC.) & A CONTINENTAL BREAKFAST.
A SHOPPING CENTER, $1.75 MOVIE THEATRE, & AMUSEMENT AREA IS ON-SITE.

Very 73,
Ron WZ1V
Conference Secretary
email: klimas%uhavax.dnet@ipgate.hartford.edu

1612. 20th Eastern VHF/UHF Conference call for papers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 13:13:57 UTC
From: klimas%uhavax.dnet@ipgate.hartford.EDU
Message-ID: <9406291313.AA28040@ipgate.hartford.edu>
Source record: 117351

SUBJECT: AUTHOR INFORMATION FOR THE PROCEEDINGS of the
20th ANNUAL EASTERN VHF/UHF CONFERENCE

Dear contributor;

The 20th Annual Eastern VHF/UHF Conference this year will be held at the Quality Inn And Conference Center, in Vernon CT, on August 26, 27, and 28, 1994.

Again this year we are going to publish a proceedings of the conference in conjunction with the ARRL. There are some noted authors again this year. If you have anything that you wish to contribute for the proceedings we need to receive this material by July 22, 1994. Please make the material "ready for press" quality, due to the time allotted, we cannot rework the material. Photographs are reproducible (black&white is better than color, but color is OK too) and their mounting position needs to be identified on an 8 1/2 x 11 page leaving a 1" margin on all sides. (Draw boxes with words such as Photo 1 within. Label the backs of the photographs with Photo 1, etc. using a permanent marker. Captions may be typed above or below the photo outline). Text should be presented with the same margin if possible. All material for the proceedings should be forwarded to Ron, WZ1V.

If you wish to transmit anything electronically, use:
Internet Email: klimas%uhavax.dnet@ipgate.hartford.edu
I can handle UUEncoded or XXEncoded archived files as well.
I prefer archives in ZIP, ARC, ARJ, or LZH formats, but can handle others.
I prefer Text in plain Ascii. (but Works or WordPerfect is ok).
I prefer graphics in PCX or GIF format, but can convert most others.
You may also send articles in on disk this way. (PC only, don't have a Mac) or upload them to my BBS at 203-768-4758 anytime after 4pm EST.

If you have any other questions concerning the conference please don't hesitate to contact us. Again, thank you for your support to make this years' conference better than ever.

Thank You and 73's,

Stan Hilinski, KA1ZE Ron Klimas, WZ1V
17 Pilgrim Drive 458 Allentown Rd.
Tolland, Ct. 06084 Bristol, CT 06010
(203)-649-3258 Work (203)-768-4758 Work
(203)-872-6197 Home (203)-589-0528 Home
Conference Chairman (203)-768-5074 FAX
Conference Secretary

1613. Anyone Built a 16 bit PC IO port ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 15:17:33 UTC
From: ee17@csu.napier.ac.uk
Message-ID: <2997.9406291417@csu.napier.ac.uk>
Source record: 117357
Cross-posted to: rec.radio.amateur.homebrew,comp.sys.ibm.hardware.misc

I would like to build a sixteen bit IO port for a 3/486sx.
Has anyone ever built a sixteen bit port It seems to me to be a bit
trickier than it first appears. ..... :-)
If you have or have the schematics then could you email me or post to this
group. (8 bit ports and details I don't need)
uuencoded or shipped schematics OK.

many thanks AJD

+---+
| Alastair J. Downs ____\ a.downs@csu.napier.ac.uk |
| E.E & Comp.Eng.Dept. \ |\ \ \ phone +44 31 455 4389 |
| Napier University, Edinburgh | fax: +44 31 455 7938 |
| Scotland, UK GM6NEI |
+---+

1614. CW Timings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 16:30:33 UTC
From: fax@sparc4.Ico.Olivetti.COM
Message-ID: <9406291630.AA25658@sparc4.ICO.OLIVETTI.COM>
Source record: 117352

Hi all,
I've built a keyer with a LCD that should indicate the current keying speed
but I'm having trouble to tune it to show the *real* speed in WPM.
I tried to use the following proceeding assuming 'PARIS' as the standard
word for my calculations :

1 word = 50 dots (including 1 dot for dot/dash separation, 3 dots
inter-character separation and 7 dots inter-word separation)

Dot time = 60 / (50 * WPM)

So, supposing a speed of 20 wpm, I end up with a dot time of 60 msec
which is fairly slower than SuperMorse. I know that some cw programs use
the farsnworth method but SM should not use it if the the speed params show the
same value.
Does anyone know the correct formula?

Thanks much

--
Marco Fassiotto, i1iiy/aa1iu
Internet : fax@sparc4.ico.olivetti.com
AX25 : aa1iu@n0ary.#nocal.ca.usa.na

1615. CW Timings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 17:48:28 UTC
From: alf@eng.iac.honeywell.com
Message-ID: <2usc5c$ll6@adm09.iac.honeywell.com>
Source record: 117380

[No readable article body recovered]

1616. Re: CW Timing

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 17:53:36 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <9406291752.AA08259@inet-gw-3.pa.dec.com>
Source record: 117353

I use the relationship

dot time (ms) = 1200 / speed (wpm)

which works out to be identical to your formula.
This has given good results for many projects over
the years.

GL

Alf NU8I/G4ABB

alf@agreen.iac.honeywell.com
Phoenix, Arizona

1617. Low-Band RF Amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 18:01:25 UTC
From: tavernin@sun1.interlan.com
Message-ID: <Cs67EE.D13@rd1.racal.com>
Source record: 117354

A while ago I remember seeing a series of articles posted by a fellow who built a low-band RF amplifier using inexpensive transistors ...

I'd appreciate a copy of these articles since I've misplaced mine!

Thanks,

Victor Tavernini
Racal-Datacom, Inc.

tavernin@sun1.interlan.com

1618. Jennings Radio capacitor information

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 19:07:42 UTC
From: chalup@net.bio.net
Message-ID: <2usgpu$h69@net.bio.net>
Source record: 117355

I'm trying to identify some surplus HV vacuum capacitors (both fixed
and variable). All components are from Jennings Radio.

Fixed Capacitor:

Model MC-1-1000 15,000V - Capacitance (uuf)?

Variable Capacitors:

Model UCSL-1000 (CB-144) 3000V - Maximum and minimum capacitance (uuf)?

Model UCSL-750 (CD-150) 5000V - "

Model UCSXF-1200 10,000V - "

Model UCSF-500 - Maximum and minimum capacitance and voltage?

Model UCSL-750 (CD147) - "

So if you have an old Jennings catalog, I'd greatly appreciate the assistance.

TNX!

Mike WA2FHF
internet: chalup@presto.ig.com

1619. FT caps needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 21:59:26 UTC
From: loase@iccgcc.cs.hh.ab.com
Message-ID: <1994Jun29.165926.1@iccgcc.cs.hh.ab.com>
Source record: 117356

Can anyone on the net suggest a supplier for .001 feed through capacitors?

Thanks
Jim Loase
WD8RPT

1620. Re: FT caps needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 22:18:13 UTC
From: tom_boza@ccm.hf.intel.com
Message-ID: <2uss92$q3q@chnews.intel.com>
Source record: 117358

In article <1994Jun29.165926.1@iccgcc.cs.hh.ab.com>,
<loase@iccgcc.cs.hh.ab.com> writes:
> Path:
chnews!ssd.intel.com!news.kei.com!eff!usenet.ins.cwru.edu!news1.hh.ab.com!iccgc
c.cs.hh.ab.com!loase
> From: loase@iccgcc.cs.hh.ab.com
> Newsgroups: rec.radio.amateur.homebrew
> Subject: FT caps needed
> Date: 29 Jun 94 16:59:26 EST
> Organization: Allen-Bradley Company, Inc.
> Lines: 6
> Distribution: inet
> Message-ID: <1994Jun29.165926.1@iccgcc.cs.hh.ab.com>
> NNTP-Posting-Host: alf.cs.hh.ab.com
>
> Can anyone on the net suggest a supplier for .001 feed through capacitors?
>
> Thanks
> Jim Loase
> WD8RPT
>

Try:

Mhz Electronic, Inc.
3802 N. 27th Ave.
Phoenix, Arizona 85027
PHONE: 800-528-0180
FAX: 602-285-9066

Tom, WB7ASR...

1621. Project Idea!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-29 22:37:00 UTC
From: Guy.Houle%stat@deltacom.cam.org
Message-ID: <6699A3C7@deltacom.cam.org>
Source record: 117359

SO> I keep looking at that Uniden 2600 with the blown final transistor...
SO>..and I keep thinking: "How tough would it be to convert this muther
SO>to 6 meters?"
Have you considered building (or purchase, in the extreme case) an external converter ? In many instances, these converter work with an input of 10 meters (28-29 Mhz) and convert them to 6 meters...among others.
73 de Guy Houle, VE2VGA
Boucherville, Qc, Canada

 SLMR 2.1a
--- WILDMAIL!/WC v3.50b
) 279-5145 HST/V32bis - (128:200/30.0)

1622. Inductance of toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 01:33:24 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Jun29.213324.925@wb3ffv.wb3ffv.ampr.org>
Source record: 117361

Does anyone know where I can find the formula for finding the inductance of a toroidal inductor? I do NOT mean the formula which is derived on the published "Al" values, but rather a formula based on the physical measurements such as height, circumferance, etc. (There has been a similar formula for years in the ARRL handbook for solenoidal inductors, but I've never seen one for toroids.)

Part Two--Does anyone know the exact methodology used by the industry

to determine the "Al" value of toroidal forms? Those values are usually specified as microhenries per 100 turns for powdered irons, and millihenries per 1000 turns for ferrites. The question: Do they wind a single turn and extrapolate that, do they wind the 100 or 1000 turns and measure resulting inductance, if they do it that way do they then turn around and calculate the distributed capacitance and factor that out, etc... 73 DE WA8MCQ

1623. Re: CW Timings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 04:18:13 UTC
From: mjsilva@ted.win.net
Message-ID: <365@ted.win.net>
Source record: 117360

In article <9406291630.AA25658@sparc4.ICO.OLIVETTI.COM>, fax@sparc4.Ico.Olivetti.COM (fax@sparc4.Ico.Olivetti.COM) writes:
>
>Hi all,
>I've built a keyer with a LCD that should indicate the current keying speed
>but I'm having trouble to tune it to show the *real* speed in WPM.
>I tried to use the following proceeding assuming 'PARIS' as the standard
>word for my calculations :
>
> 1 word = 50 dots (including 1 dot for dot/dash separation, 3 dots
> inter-character separation and 7 dots inter-word separation)
>
> Dot time = 60 / (50 * WPM)

This is correct. An often-used equivalent is WPM = 2.4 * DPS (dots per second). Since 1 DPS is 2 dot-times, the formulas are equivalent.
>
>So, supposing a speed of 20 wpm, I end up with a dot time of 60 msec
>which is fairly slower than SuperMorse. I know that some cw programs use
>the farsnworth method but SM should not use it if the the speed params show the
>same value.
>Does anyone know the correct formula?
>
Your number is correct, so SuperMorse must have a timing error, at least on your computer. How much off is it?

Mike, KK6GM

1624. Re: Project Idea!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 13:03:31 UTC
From: zlau@arrl.org
Message-ID: <1994Jun30.130331.6860@arrl.org>
Source record: 117370

Erik Sorgatz (sorgatz@avatar.tti.com) wrote:
: I keep looking at that Uniden 2600 with the blown final transistor...
: ..and I keep thinking: "How tough would it be to convert this muther
: to 6 meters?" Well...let's see..a new display table in the uP's rom
: so it would read "50-54" instead of "26-30", a new LO, a new mixer,
: maybe keep the IF's as is...modify the mixers a bit, a new final..
: ..some osc in the receiver?...Hmmm??

Depends whether it has to pass spectral purity requirements. It
is pretty easy to get mixing spurs -40 dB down. But, for 6 meters,
you need at least -60, which isn't quite as easy. Problem is, it
isn't unusual for some of those spurs to "race across the passband"
as you tune the rig. Thus, no matter how tight your filters, you
might not be able to filter some of them out, unless you don't mind a
rig that doesn't the edges of the band.

It does seem a bit easier to do with a phasing exciter, since the
mixing products can be avoided or reduced.

Yes, a tracking filter might work, except that sharp tracking filters
don't seem to be available on inexpensive radios yet. You can get
them as a feature on radios that cost more than new cars...
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1625. How make simple FM (88-108MHz) receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 14:39:50 UTC
From: mahjelt@freenet.hut.fi
Message-ID: <2uulfm$bc6@freenet.hut.fi>
Source record: 117362

Hi, does anybody have any schematics or any stuff about how to build
a simple FM receiver (with stereo decoding)? Are there any nifty little
IC's around that contain most of the electronics?

-Mathias
--

1626. General electronics newsgroup?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 14:41:08 UTC
From: mahjelt@freenet.hut.fi
Message-ID: <2uuli4$bgc@freenet.hut.fi>
Source record: 117363

Are there any newsgroups for general electronic stuff? This one is the only one I found so far, and it's far from general. I'd like to discuss some audio circuits. Anybody know where?

-Mathias
--

1627. Re: Inductance of toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 14:48:15 UTC
From: tomb@lsid.hp.com
Message-ID: <Cs7t4F.3M9@hpcvsnz.cv.hp.com>
Source record: 117364

Mike Czuhajewski (Mike.Czuhajewski%hambbs@wb3ffv.ampr.org) wrote:
: Does anyone know where I can find the formula for finding the
: inductance of a toroidal inductor? I do NOT mean the formula which is
: derived on the published "Al" values, but rather a formula based on the
: physical measurements such as height, circumferance, etc. (There has
: been a similar formula for years in the ARRL handbook for solenoidal
: inductors, but I've never seen one for toroids.)
:
From Terman's "Radio Engineers' Handbook," page 57,

"The low-frequency inductance of a toroidal coil of n turns with a
winding of circular corss section of diameter d and a radius of
revolution D/2 inches, as shown in Fig. 22, is

Lo = 0.01595*n^2*[D-(D^2-d^2)^0.5] microhenrys

For toroidal coils in which the turn diameter is much less than the
toroid diameter (i.e., d<0.1D), the inductance is approximately

Lo = 0.007975*d^2*n^2/D microhenrys

Toroidal coil of rectangular cross section. -- When the axial depth of
the winding is h and the inner and outer diameters d1 and d2 inches,
respectively, as shown in Fig. 23, the low-frequency inductance is

Lo = 0.01170*n^2*h*log(d2/d1) microhenrys. "

(This rather old book is still a good reference for a wide variety of
fundamental information. However, not all the formulas are valid over
as wide a range of parameters as you might hope; many are approximations
that start to fall apart at extremes of the parameters, and often where
those extremes start isn't clearly stated. Still, it's a good starting
point. Note that these formulae are all for air-core coils...)

73, K7ITM

1628. 1993 IC Master $75 postpaid (USA only).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 17:33:27 UTC
From: swifty@tc.fluke.COM
Message-ID: <Cs80rw.C14@tc.fluke.COM>
Source record: 117366
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew,sci.electronics

I have the 1993 IC Master for sale for $75 shipped postpaid
in the United States via 4th Blass Books. Prepaid by check or
money order.

Send me email if you wish to purchase this.

--

Steve Swift, Sr. Staff Engineer
Domain: swifty@tc.fluke.COM
Voice: (206) 356-5737 (Voice mail), FAX: (206) 356-5108
UUCP: {uw-beaver,microsof,sun}!fluke!swifty
US mail: Fluke Corporation/ P.O. Box 9090/ MS 266D/ Everett WA 98206

1629. Where might I find..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 17:51:52 UTC
From: acarhart@netcom.com
Message-ID: <acarhartCs81MH.2nv@netcom.com>
Source record: 117365

Where might I find a make-your-own-AM-transmitter kit?
If it is low enough power, the FCC allows transmissions on the AM band, correct?
Would I be able to power it with 6/12 volts? A car lighter?
Thank you...bye
-Allan Carhart
acarhart@netcom.com

1630. Re: Inductance of toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 19:35:34 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <2uv6q6$4a0@tekadm1.cse.tek.com>
Source record: 117367

Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski):

>Does anyone know where I can find the formula for finding the
>inductance of a toroidal inductor? I do NOT mean the formula which is
>derived on the published "Al" values, but rather a formula based on the
>physical measurements such as height, circumferance, etc. (There has
>been a similar formula for years in the ARRL handbook for solenoidal
>inductors, but I've never seen one for toroids.)

>Part Two--Does anyone know the exact methodology used by the industry

>to determine the "Al" value of toroidal forms? Those values are
>usually specified as microhenries per 100 turns for powdered irons, and
>millihenries per 1000 turns for ferrites. The question: Do they wind
>a single turn and extrapolate that, do they wind the 100 or 1000 turns
>and measure resulting inductance, if they do it that way do they then
>turn around and calculate the distributed capacitance and factor that
>out, etc... 73 DE WA8MCQ

L = (4*10^-9*pi*murel*A/l)*n^2

where

L = inductance in henrys
murel = relative permeability of the core
A = core cross-sectional area in cm^2
l = magnetic path length in cm (typically the average of outer & inner
circum.)
n = number of turns

The 4*pi*10^-9 comes from the value of the permeability of free space, and
the use of cm instead of m for A and l.

The term in parentheses is Al in henrys/turn^2.

Al is measured using a fairly large number of turns, because the formula
doesn't hold for sparse windings, particularly with low-permeability
materials or at frequencies at which permeability is low. This is due to
the fact that with sparse windings, not all the flux from each turn is
coupled to every other turn, resulting in reduced inductance. It's also
typically measured at a sufficiently low frequency that the effect of
capacitance is negligible.

Note that the relative permeability is a function of frequency and of flux
density, so the inductance (and Al value) will change with these parameters.
Also, the permeability actually is a complex quantity, leading to frequency-
and flux density-related loss.

Roy Lewallen, W7EL
roy.lewallen@tek.com

1631. Re: General electronics newsgroup?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 20:54:29 UTC
From: sct@po.cwru.edu
Message-ID: <2uvbe5$grc@usenet.INS.CWRU.Edu>
Source record: 117368

In article <2uuli4$bgc@freenet.hut.fi>,
Mathias Hjelt <mahjelt@freenet.hut.fi> wrote:
> Are there any newsgroups for general electronic stuff?

Take a look at sci.electronics. The volume is high, but the noise level
is surprisingly low.

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1632. Re: How make simple FM (88-108MHz) receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-06-30 23:12:26 UTC
From: dmiller@crl.com
Message-ID: <2uvjgq$k7d@crl2.crl.com>
Source record: 117369

Mathias Hjelt (mahjelt@freenet.hut.fi) wrote:

: Hi, does anybody have any schematics or any stuff about how to build
: a simple FM receiver (with stereo decoding)? Are there any nifty little
: IC's around that contain most of the electronics?

Check out the Phillips (or Signetics) TDA-7000. This chip does most of
the FM receiver chore, but you will need to find another chip to do the
FM decoding.

--

Don Miller Electronic System Products
dmiller@crl.com

1633. Re: General electronics newsgroup?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-01 02:10:56 UTC
From: mjsilva@ted.win.net
Message-ID: <367@ted.win.net>
Source record: 117371

In article <2uuli4$bgc@freenet.hut.fi>, Mathias Hjelt (mahjelt@freenet.hut.fi) writes:
>
>Are there any newsgroups for general electronic stuff? This one is the
>only one I found so far, and it's far from general. I'd like to discuss
>some audio circuits. Anybody know where?
>
sci.electronics is what you want. LOTS of activity.

Mike, KK6GM

1634. BAYCOM packet modem + Lost mail file...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-01 08:04:44 UTC
From: demetre@phaethon.intranet.gr
Message-ID: <2v0ims$eqs@helios.intranet.gr>
Source record: 117372

CQ Netters...

Recently I posted requesting information on homebrewed packet
modems, I received several replies but I managed to purge my
mail file :-(
Please the people who wrote to me, get in touch with me via E-mail...

TNX-73's

demetre@intranet.gr

1635. AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-01 17:33:23 UTC
From: acarhart@netcom.com
Message-ID: <acarhartCs9vFq.Joz@netcom.com>
Source record: 117373

acarhart@netcom.com (A-L-L-_A_-N-TWO-A's) writes:

>Where might I find a make-your-own-AM-transmitter kit?
>If it is low enough power, the FCC allows transmissions on the AM band, correct?
>Would I be able to power it with 6/12 volts? A car lighter?
>Thank you...bye
>-Allan Carhart
>acarhart@netcom.com

Okay...I should be a little more careful with my words, in this group.
I am hoping to build a trasmitter to broadcast on the radio
spectrum, known to laymen as "AM Radio"
in contrast to "FM Radio" --- In the portion of the radio wave
spectrum between 550 KHz and 1600 KHz...I chose AM because I am under
the impression that Amplitude Modulation is a bit easier to pull off than
Frequency Modulation....and currently, I have only an AM radio in my car...
My final goal is to solve the following problem:
Of the three cars my family owns, one only has an AM radio, one has FM/AM,
and one has a tape deck and FM/AM....
I would like to listen to my favorite CD, my favorite tape, or my favorite
FM or AM station in any of the above mentioned vehicles....

I was impressed with the CD-to-tape invention which is now on the market
from Radio Shack, and many other electronics store...(A fake-tape goes in your
tape deck and produces the signals taken from the CD player)

....but then, I thought, WHY stop there???

Why not hook up a CD player (or tape player or even FM radio) to a transmitter,
with the power to only go a few feet...
The device will sit on the passenger's lap, and have enough power to
transmit to the car stereo, sitting in the front of the car.

We will trasmit, let's say on 1590 KHz, and then tune the car's stereo
to 1590....

As long as I keep this extremely low power, (battery operated I hope),
does anyone know if the FCC would complain?
What if I'm stopped in traffic and the car next to me can pick up
my signal? Is That illegal?

Thank you for any help...
and my final note:
Disclaimer: I have the right to ask questions...I hope that this has not
portrayed me as being too ignorant...If I am told that this is against the law,
I have no intention of breaking the law....Please no flames...thank you.

-Allan Carhart
acarhart@netcom.com

1636. RF PROBE FOR 800/900MHZ

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-01 21:33:28 UTC
From: shane@mdd.comm.mot.com
Message-ID: <2v2238$ie1@daffyduck.mdd.comm.mot.com>
Source record: 117375

We have a number of 800 and 900 MHz radios here in our lab that are in need of troubleshooting. Does anyone out there have any ideas on constructing a "sniffer" for these frequencies? I was thinking of a *tiny* wire loop that would run into the RF port of a mixer. The LO port would receive fc - 1MHz. The IF would give an envelope capable of display on a scope. Alternatively the wire loop could run directly into a power meter. Put the loop on the end of a plastic probe, place the loop near the signal of interest, watch the display.

Whaddayathink?

-=-
Hugh Shane | 206 487 5909 (PST)
Motorola Wireless Data | N7UAX
shane@mdd.comm.mot.com | #include <std_disclaimer.h>
-=-

1637. Repeaters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-02 02:24:33 UTC
From: xdemxs@oryx.com
Message-ID: <2v2j51$e1g@lm1.oryx.com>
Source record: 117374

I am looking for anybody with information about repeaters located near or in Cimarron, NM.

1638. RE: AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-02 06:09:38 UTC
From: awoodhull@hamp.hampshire.edu
Message-ID: <2v401p$dlv@gort.oit.umass.edu>
Source record: 117378

In Article <acarhartCs9vFq.Joz@netcom.com>
acarhart@netcom.com (ALL-A-N Carhart) writes:

>Why not hook up a CD player (or tape player or even FM radio) to a transmitter,
>with the power to only go a few feet...
>The device will sit on the passenger's lap, and have enough power to
>transmit to the car stereo, sitting in the front of the car.
>
>We will trasmit, let's say on 1590 KHz, and then tune the car's stereo
>to 1590....
>

I'm old enough to remember when such transmitters were commonly used in household equipment. The 78 rpm record player my family had when I was very young used such a transmitter, you tuned an a.m. receiver to 530 khz. (kc. in those days) and there it was. I know this because by the time I became a teenager I had taken the thing apart for parts for my ham projects.

There are differences between the old 1940's style wireless record players and the situation you describe, however. In the old days tube type equipment all operated from the a.c. power line and the a.m. signal was generally coupled to the power cord, which would then couple the signal to an a.m. radio plugged into the same circuit. For your application you will probably need some kind of antenna. Also, car radios are generally pretty carefully designed with metal cases, bypassed power leads, and shielded leads to the car antenna so that they won't pick up any of the radio noise that is generated by the ignition system and other parts of the car electrical system. You might find it difficult to pick up a signal originating inside the car.

There are cheap wireless microphones sold as toys which work the way you describe. I got one for 50 cents at a neighborhood tag sale. You might look around for a cheap way to test your plan -- give it a try.

73, Al N1AW
Albert S. Woodhull
Hampshire College, Amherst, MA, USA
awoodhull@hamp.hampshire.edu

1639. Re: AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-02 12:48:45 UTC
From: sct@po.cwru.edu
Message-ID: <2v3nnd$rcp@usenet.INS.CWRU.Edu>
Source record: 117376

In article <acarhartCs9vFq.Joz@netcom.com>,
ALL-A-N Carhart <acarhart@netcom.com> wrote:
> As long as I keep this extremely low power, (battery operated I hope),
> does anyone know if the FCC would complain?

It is legal to transmit within the AM broadcast band without a license
as long as you adhere to certain limits on power and antenna. Your
idea sounds perfectly reasonable to me -- you won't have any problem
going a couple of feet with a legal transmitter.

The last time I built one of these, I was in fifth grade, playing with
a Radio Shack electronics kit. There are also designs for simple AM
transmitters in the Radio Shack _Mini Engineer's Notebook_ volume,
"Communications Projects". Finally, Ramsey Electronics and JDR Microdevices
sell at least one AM transmitter kit. The catalog descriptions leave
open the question of whether these kits operate at legal power output.

> What if I'm stopped in traffic and the car next to me can pick up
> my signal? Is That illegal?

Good question. I haven't read Part 15, but it's almost certainly your
responsibility to resolve any interference you cause with the transmitter.
If you want to be sure you're legal, look up 47 CFR 15 and check out the
real rules. (How? Good question. I'd guess a big library, perhaps a
government depository library, would have it.)

Obligatory ham radio: Has anyone built a ham rig from an RS electronics
kit? It would be fun to fill in the eqipment field of a QSL card with,
"RS 75-in-1 Electronics Kit". :-)

Stephen

--
Stephen Trier
sct@po.cwru.edu
KG8IF

1640. Help determining cap values

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-02 14:09:50 UTC
From: white@ccsua.ctstateu.edu
Message-ID: <1994Jul2.090950.1@ccsua.ctstateu.edu>
Source record: 117377

I'm building the 7MHz Optimized rig & I need some help determining
the values of 4 caps:
1. Orange, square plate, "CE 309 C"
2. Orange, "331 A1J" on 1 side & "348 RFO" on the other
3. Blue, only has "333" on it
4. Blue, "33J" and "5A"
Any help or mini-treatises on caps/cap markings appreciated. The above
caps do not match up with any of the labeling schemes laid out
in the handbook.
73 de N1QVE
Harry
white@csusys.ctstateu.edu

1641. Re: Help determining cap values

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-02 15:40:08 UTC
From: dmiller@crl.com
Message-ID: <2v41oo$4e4@crl2.crl.com>
Source record: 117379

white@ccsua.ctstateu.edu wrote:

: I'm building the 7MHz Optimized rig & I need some help determining
: the values of 4 caps:
: 1. Orange, square plate, "CE 309 C"

No Idea...

: 2. Orange, "331 A1J" on 1 side & "348 RFO" on the other

330 PF 331 means 33 followed by one "0" in PF

: 3. Blue, only has "333" on it

.033 uF This is 33 followed by three "0"s in PF

: 4. Blue, "33J" and "5A"

33 PF A "J" or "K" can be replaced by a decimal point. J and K are
different tolerances (but I forget which is which).

A cap marked 3K3, for example, would be 3.3 PF.

Hope this helps!

--

Don Miller Electronic System Products
dmiller@crl.com

1642. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-03 03:00:04 UTC
From: mtracy@arrl.org
Message-ID: <rec.radio.info-arrl.email.info_773204402@ve6mgs.ampr.ab.ca>
Source record: 117381
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command in your message.

IMPORTANT: Please use the quit command in your message. This will prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling written requests. Any questions on the info-server or the content of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the reply address is redirected to keep bounced messages from endlessly looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the internet better access to the knowledgeable technical staff here at ARRL HQ. Questions relating to Amateur Radio and related technical topics are welcome. To use this service, send a normal e-mail message to tis@arrl.org with your question spelled out in plain english. For best service, be as specific as possible and keep your line length in messages to a maximum of 80 characters. Due to personnel limitations, priority will be given to questions from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the file prospect (send prospect) for information on how to easily get started in this fun hobby.

FILENAME SIZE DESCRIPTION
--- --- ---
PROSPECT.TXT 2k How to get your Amateur Radio license
EXAMS.TXT 52k Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k Examinations - what to bring - requirements
USERS.TXT 6k List of HQ Email addresses
ARRLCAT.TXT 39k Catalog of ARRL Publications - commercial content
JOIN.TXT 2k How become an ARRL member
SERVICES.TXT 5k A condensed list of ARRL membership services
TOUR.TXT 28k An electronic tour of ARRL Headquarters
DIR.HQ 5k Visiting ARRL HQ - directions and tour information
HFBANDS 7k Breakdown of users of HF spectrum
Q-SIGS 1k ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k W1AW schedule of transmissions and operation
PRODREV1.TXT 12k Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k QST Bibliographies List
RFIGEN.TXT 37k How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k Lots and lots of ham/electronic company addresses
KITS.TXT 6k List of companies that sell kits
BBS.TXT 12k List of ham-radio land-line bulletin boards
FAQ1.TXT 25k Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k Amateur Radio Advanced and Technical Questions

American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

1643. re:AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-03 16:27:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.666.7584.0NFB2AFA@woodybbs.com>
Source record: 117382

In <acarhartCs9vFq.Joz@netcom.com> Allan Carhart <acarhart@netcom.com>
wrote:

AC>>Where might I find a make-your-own-AM-transmitter kit?
AC>>If it is low enough power, the FCC allows transmissions on the AM band,
AC>correct?
AC>>Would I be able to power it with 6/12 volts? A car lighter?

AC>As long as I keep this extremely low power, (battery operated I hope),
AC>does anyone know if the FCC would complain?
AC>What if I'm stopped in traffic and the car next to me can pick up
AC>my signal? Is That illegal?

Part 15 of the FCC rules permits you to transmit up to 100 milliwatts
(0.1 Watt) without a license as long as you do not cause interference to
licensed stations. I believe there is a restriction on the size of the
antenna you can use.

AM transmitter kits are available from Ramsey Electronics and also from
Pan-Axis Productions in California: (916) 534-0417

Art

1644. NEED bare-bones FM transmitter plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-04 22:00:19 UTC
From: gt0265d@prism.gatech.edu
Message-ID: <2va0pj$df2@acmey.gatech.edu>
Source record: 117383

Hello all!

I picked up one of those recordable greeting cards the other day... even got it free, since it was a Father's Day card they no longer could sell! Anyway, after playing with it (much fun) I decided that I could hook it up to a tiny FM transmitter and have a club event, using the card's circuit to record a little message like "This is KD4UGI and you can't find me, hahaha!" and have a transmitter hunt. Anyway, what I need is just a basic FM transmitter circuit, hopefully one that can be built in a short time with basic equipment (read, soldering iron and wire cutters) and (more importantly) and can be hooked up to the recording circuit. The chip sends its audio to a cheapo small speaker, so I'll need a way to interface this output with the transmitter.

Could a $10 Radio shack walkie-talkie (do they still make those things?) be easily converted to ~145 MHz, and could the power be increased slightly to provide roughly 1 or 2 watts (or a 3 mile range)?? How would I do this, and how much will it cost? Would I be better off starting from scratch?

Thanks for your help. If this is on some FTP site, that's cool too, just point it out to me.

73 de G8R

****
* Mike "Gator" Whaley K Chief of Aerospace Engineering *
* gt0265d@prism.gatech.edu D George P. Burdell Engineering Inc. *
* 4 *
* Georgia Tech Box 40265 U "Ipecac- isn't that a Genesis album?" *
* Atlanta, GA 30332 G --- Joel, MST 3K *
* (404) 881-9580 I *
****
* I absolutely refuse to put a disclaimer here: All opinions expressed above *
* are EXACTLY what Georgia Tech would tell you, VERBATIM, with NO DIFFERENCES.*
****

--
==
MIKE "GATOR" WHALEY KD4UGI H: (404) 881-9580 W: (404) 853-9902
gt0265d@prism.gatech.edu 40265 Georgia Tech Station, Atlanta, GA 30332
==

1645. Baycom schematics wanted, NOT postscript

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-04 22:21:47 UTC
From: cmarsh@calvin.stemnet.nf.ca
Message-ID: <2va21r$r8s@coranto.ucs.mun.ca>
Source record: 117384

I recently got my hands on a two-meter FM transciever, and now I would like to get into packet radio. I recently FTPed the schematics for a 'Baycom' modem from some odd FTP site, however they are in PostScript format, and I do not own a Postscript compatible printer. Does anybody know where you can find the schematics for this TNC in a format such as PCX, TIFF, etc.?

--

_____________ Charles Marsh, a.k.a VO1VZ
[-] |- == =======::| Email: cmarsh@calvin.stemnet.nf.ca
_|_ |: + + + (): + :|
__/ ~~~~~~~~~~~~~~~ "I'd rather be HAMming around!"

1646. Want Terman book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-04 23:04:10 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Jul04.190410.2997@wb3ffv.wb3ffv.ampr.org>
Source record: 117385

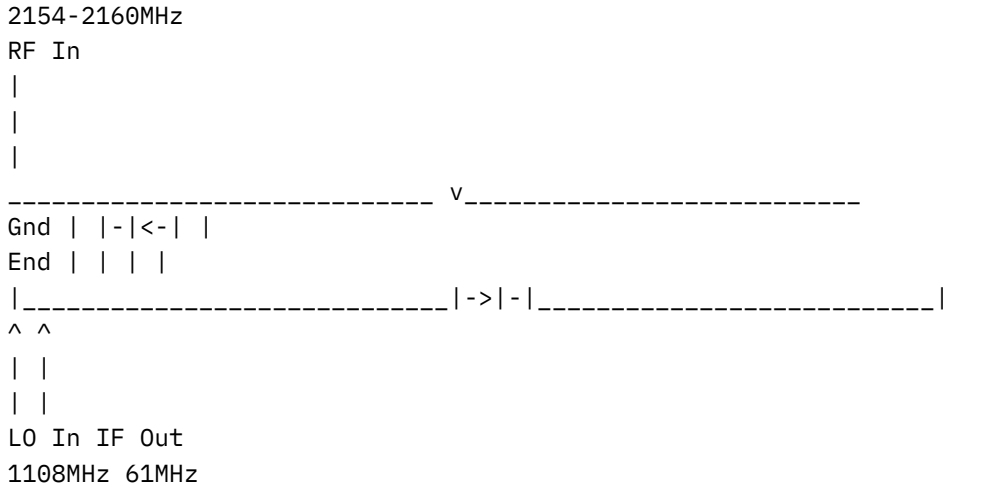
I'm looking for a reasonably priced copy of Radio Engineers Handbook by Terman, dated somewhere back in the WWII era. (Please note the exact title; there are 3 other books by the same author with the word "radio" in the title.) Forgive me if this is not the most appropriate place to post this request, but a) my Internet access is extremely limited and I can only read rec.radio and can only post to rec.radio.amateur (can't complain for only $5 a month) and b) I know for a fact there are a lot of sharp folks out there on this particular distro list and many of you have to have this book. (Being willing to part with it is an entirely different matter!) 73 de WA8MCQ

1647. microwave mixer details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-05 12:56:07 UTC
From: David DiCarlo <r14793@waccvm.sps.mot.com>
Message-ID: <1994Jul5.125607.20581@newsgate.sps.mot.com>
Source record: 117386

I dug up an old 73 Magazine article from 1980 for an MDS microwave downconverter. It uses an oscillator with half the frequency of the desired local oscillator and a half-wave air-line microstrip mixer. It converts 2154 and 2160 down to channel 3 (or 2 or 4 depending on how it is tuned).

The microstrips are held above the ground plane 1/16 in, and the strips are
3/16 in wide. The grounded end is 2-3/4 (7cm) in long and the rf side is 2-5/8 in (6.77cm). The diodes are oriented as shown (HP 5082-2835), and there is half an inch between the 2 strips for the diodes. The IF out is tapped at the half way point of the ungrounded strip. I have not shown the
high and low pass filters, and have noted the original frequencies.



What I want to do with this is convert the whole thing to a block converter
for 2500 to 2700 MHz down to 200-400 MHz. The local oscillator would be 1150
MHz, easily in range of the local oscillator of this article. I want to build
this on a double sided FR4 board as well.

I have pretty well figured out the width of the strips to keep the impedance
the same as in the air case. But I don't know if the lenght of the half wave
strips should be tuned for the local oscillator or the incoming signal, and
whether or not the 1/2 inch between the strips is all that critical.

Does anyone know?

Thanks,
Dave DiCarlo
r14793@waccvm.sps.mot.com

1648. Re: Want Terman book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-05 15:35:08 UTC
From: tomb@lsid.hp.com
Message-ID: <CsH4ML.8Br@hpcvsnz.cv.hp.com>
Source record: 117387

Mike Czuhajewski (Mike.Czuhajewski%hambbs@wb3ffv.ampr.org) wrote:
: I'm looking for a reasonably priced copy of Radio Engineers Handbook
: by Terman, dated somewhere back in the WWII era. (Please note the
: exact title; there are 3 other books by the same author with the word

About 4 months ago I picked up a copy in a used book store for under
$10. I'm posting this only to give an idea of prices; I'm not at
all interested in parting with it at any price near that.

73, K7ITM

1649. Re: microwave mixer details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-05 15:45:47 UTC
From: aj@sage.cc.purdue.edu
Message-ID: <aj.773423147@sage.cc.purdue.edu>
Source record: 117388

David DiCarlo <r14793@waccvm.sps.mot.com> writes:

> 2154-2160MHz
> RF In
> |
> |
> |
> _____________________________ v_____________________________
> Gnd | |-|<-| |
> End | | | |
> |_____________________________|->|-|_____________________________|
> ^ ^
> | |
> | |
> LO In IF Out
> 1108MHz 61MHz

> But I don't know if the length of the half wave strips should be
> tuned for the local oscillator or the incoming signal, and whether or
> not the 1/2 inch between the strips is all that critical.

One of the two should be tuned for the incoming signal's frequency, I would guess, as this would have the effect of making the incoming signal stronger through resonance. The other should be tuned to the incoming signal plus or minus (looks like plus from the length of the IF Out side, and jibes with good converter design principles) the IF frequency.

The half inch is probably just enough room to mount the mixer diodes, as microwave types tend to be really big-cased for some reason. When you get the diodes, measure them and set the spacing between the strips to be as close to the ends of the diodes as possible. Your biggest worry about losses is from inductance and conductance of solder at these frequencies. Pb/Sn solder is measurably less conductive at these frequencies than clean copper, but not so much that you'll really notice. Bad joints are more the issue.

I've worked at 915MHz for two years, and this isn't a lot different in the basics. Good luck on your project!

: John Dormer
: aj@sage.cc.purdue.edu
: jad@mdn.com

1650. Re: General electronics newsgroup?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-05 16:26:44 UTC
From: jcmiller@turquoise.usafa.af.mil
Message-ID: <JCMILLER.94Jul5162644@turquoise.usafa.af.mil>
Source record: 117390

In article <2uvbe5$grc@usenet.INS.CWRU.Edu> sct@po.cwru.edu (Stephen C. Trier) writes:

Mathias Hjelt <mahjelt@freenet.hut.fi> wrote:
> Are there any newsgroups for general electronic stuff?

Take a look at sci.electronics. The volume is high, but the noise level
is surprisingly low.

Stephen

--

Readers of this group may also be interested in sci.electronics.repair, which I
just newgrouped here (and which will presumably be carried most places).

73,

Jeff

--
Jeff Miller, NH6ZW/N0, AFA5MJ/AFF5CO (ex WD6CQV, AFA1DO, AFA8JM, AFA1HE)
USAFAnet Manager and General Troubleshooter [jcmiller@gems.usafa.af.mil] or
HQ USAF/DFYC, USAF Academy, CO 80840 [millerjc%dfyc@dfmail.usafa.af.mil]
55: It's not a good idea, it's just the law. E-mail for NMA info.

1651. ex

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 01:19:12 UTC
From: white@ccsua.ctstateu.edu
Message-ID: <1994Jul5.201912.1@ccsua.ctstateu.edu>
Source record: 117391

Toroids ......
What is the significance of the PHASING dots on a schematic?
And
What if the toroid requires 55 turns and you can only fit 35 turns on the core???
Any help appreciated. I'm working on the 7MHz Optimized.
Regards
Harry

1652. ACS (Al's Circuit Simulator) version 0.14 is available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 03:34:09 UTC
From: al@atd.rochester.ny.us
Message-ID: <1994Jul6.033409.14028@atd.rochester.ny.us>
Source record: 117395
Cross-posted to: sci.electronics.cad,sci.electronics,comp.lsi,comp.lsi.cad,rec.radio.amateur.homebrew

A new version of ACS (Al's Circuit Simulator) has been posted to alt.sources. It is also available by ftp from cs.rit.edu or ee.rochester.edu. (in pub/acs). If you don't have net access you can get it by dial-up from (USA) 716-272-1645.

ACS is a general purpose circuit simulator. It performs nonlinear dc and transient analyses, fourier analysis, and ac analysis linearized at an operating point. It is fully interactive and command driven. It can also be run in batch mode or as a server. The output is produced as it simulates. Spice compatible models for the MOSFET (level 1 and 2) and diode are included in this release.

This version (0.14) includes several improvements including convergence improvements, a new "alarm" command, and significant bug fixes in time step control. There are other minor improvements.

Since it is fully interactive, it is possible to make changes and re-simulate quickly. The interactive design makes it well suited to the typical iterative design process used it optimizing a circuit design. It is also well suited to undergraduate teaching where Spice in batch mode can be quite intimidating. This version, while still officially in beta test, should be stable enough for basic undergraduate teaching and courses in MOS design, but not for bipolar design.

In batch mode it is mostly Spice compatible, so it is often possible to use the same file for both ACS and Spice.

The analog simulation is based on traditional nodal analysis with iteration by Newton's method and LU decomposition. An event queue and incremental matrix update speed up the solution for large circuits.

It also has digital devices for mixed signal simulation. The digital devices may be implemented as either analog subcircuits or as true digital models. The simulator will automatically determine which to use. Networks of digital devices are simulated as digital, with no conversions to analog between gates. This results in digital circuits being simulated faster than on a typical analog simulator, even with behavioral models. The digital mode is experimental and needs work. There will be substantial improvements in future releases.

ACS also has a simple behavioral modeling language that allows simple behavioral descriptions of most components including capacitors and inductors. Unfortunately, it is not well documented.

ACS uses an object oriented approach to modeling. Complex models like MOSFETS are made of simpler ones like resistors, capacitors, diodes, and any other models that may already exist. The model designer does not need to worry about details like convergence checking, bypass checking, integration, or how the new device plugs into the solution matrix because these are already taken care of by the basic models. This results in a dramatic improvement in the time it takes a researcher or model designer to install a new model, compared to Spice.

The source and documentation can be obtained by anonymous ftp from ee.rochester.edu or cs.rit.edu in /pub/acs. It can also be obtained by dial-up (USA) 716-272-1645 in /pub/acs. It may be distributed under the terms of the GNU general public license. The dial-up also has some test circuits, pre-compiled executables for Next, Sun4, MSDOS and possibly others, and documentation in dvi and postscript.

If you are tired of Spice and want a second opinion, you want to play with the circuit and want a simulator that is interactive, or you want to study the source code and want something easier to follow than Spice, try ACS.

ACS is an ongoing research project. It is being released in a preliminary phase in hopes that it will be useful and that others will use it as a thrust or base for their research. I also hope for some comments that may help me direct my research.

Albert Davis, 136 Doncaster Rd., Rochester, NY 14623.
email: al@atd.rochester.ny.us, atd@cs.rit.edu, or davis@ee.rochester.edu
fax: 716-272-1645

1653. Camcorder viewer needed.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 06:19:49 UTC
From: dalep@crl.com
Message-ID: <2vdie5$tg@crl.crl.com>
Source record: 117392
Cross-posted to: sci.electronics,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,ucb.digital-video,alt.radio.digital,sci.electronics.repair

Hello all-

I am interested in making some "VR" glasses except instead of using small computer screens or whatever they are, I would like to use the small screen that is looked into when you use a camcorder. Does anybody have any idea where I could obtain these? I would appreciate addresses, phone#'s, and, prices. Thanx in advance.

1654. RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 07:11:54 UTC
From: cschmidt@diralect.me.pvamu.edu
Message-ID: <2vdlfq$lnj@news.tamu.edu>
Source record: 117393

I have a problem with RF feedback in my mic only when I touch
the mic to my face while speaking. It seems that it is making the
Radio Squeal. I have a RCI 2950 with a Texas Star DX 667V amplifier'
and a cheap Mag-mount base with a base loaded antenna with about
a 3.5" whip on top. I do not have this problem when not using
the amplifier. On AM it sqeuals when I talk. On SSB it is fine until
I start talking and then it Stays keyed up and squeals for a few seconds then
stops. I have had this problem with other Equipment too. But not this
bad.

If anyone knows of some RF filtering Technics for Microphones
I would appreciate it very much. I can't DX without the amp very
well because of the Low gain of the antenna. I am new at this so
if you get real technical with terms please remember to elaborate a
little. If anyone else has had this same problem with the 2950 or
any other radio I would be glad to hear how you got rid of the squeal
and the feedback.

thanx in adv.

73,

chris
Houston tx.

1655. 1/4-wave coax filters ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 10:42:50 UTC
From: elendir@enst.fr
Message-ID: <2ve1ra$83j@cismsun.univ-lyon1.fr>
Source record: 117394

Hi !
Some time ago, I posted here some request regarding the design of empty cavities to implement high-Q band-pass filters [for a repeater project].
I found some infos, but the dimensions of the required box seem to be at best unpractical [Even for an UHF repeater].
Some OM told me about 1/4-wave "cavities" which seem to be in fact special coaxial lines. Much smaller than true cavities, but with a wire running through the empty space.
Does anybody have any info regarding this type of filtering device ? I understand it also work by a resonnating process, maybe with a clever impedance transformation, but I have no further clue. Also, the OM I talked with admitted he had bought it from a commercial source, then had them fitted for the application.
I understand also that the Q of those filters is much lower than those of true cavities.

Thanks,
Vincent.

--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

1656. Re: RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 12:38:43 UTC
From: ed@fore.com
Message-ID: <CsIr4J.8Jv@fore.com>
Source record: 117396

>I have a RCI 2950 with a Texas Star DX 667V amplifier'
>and a cheap Mag-mount base with a base loaded antenna with about
>a 3.5" whip on top.

Ok, You are probably getting rf everywhere! Do you mean a 3.5 foot antenna, or a 3.5 inch antenna? You say its a magnet mount, you DEFINATELY need a solid ground!!! I have had problems with cb & 2m magnet antennas getting sufficient ground. I have heard of others that tried magnets for hf mobile, with "hot" microphone results.

I am assuming that you are running inside a house since you are using an amp.

I am not experienced with hf transmitting, Im just a no code tech that hacked cb & swl for a few years and recently jumped in head first. I expect that a longer whip and solid electrical ground to waterpipes, heating radiators, I even expect that metal forced air heating ducts might make an improved rf ground indoors.

My 2 cents, hope its useful
Ed N3SDO

1657. Converting Tempo/Yaesu hf to 6m, Possible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 13:39:23 UTC
From: ed@fore.com
Message-ID: <CsItxo.CDC@fore.com>
Source record: 117397

Are there plans to convert Tempo/Yaesu hf rigs to 6m operation?

Is it worth doing this? Is anybody on 6m?

I know that there are transvertors to do this, but this rig can put out
100w or so, and I don't want to have to attenuate the output & then
reamplify the rf back to 100 or so watts.

I am not afraid to get inside and make modifications to the rig.
(even if permanent)

This is a 95% tube rig.

Ideas, Thoughts, comments, snyde remarks?

Ed N3SDO
Ed@fore.com

1658. Re: AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 15:29:43 UTC
From: ren@rap.ucar.edu
Message-ID: <2veil7$ha9@ncar.ucar.edu>
Source record: 117398

Although this is a 'homebrew' newsgroup, I also wanted to
post this 'solution' (which I emailed the original poster).
A simple and relatively inexpensive route would be for
him to buy an FM Converter for his AM radio. I owned one for
several years, and it served me well. It only cost around $16,
and was easy to install. With it he can still use the CD adapter.
Now this might bring up questions of fidelity but remember
the end processor is an AM radio, with its possible narrow bandwidth.
ren N0PVI
dona nobis pacem

1659. Re: Timewave DSP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 16:42:09 UTC
From: steve@hi.com
Message-ID: <steve-060794124041@brainiac.hi.com>
Source record: 117399
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Do the Timewave DSP's use an algorithm similar to the one described by W9GR in QEX (LMS adaptive filter using short-delay time-shifted input), or is there more to the Timewave noise reduction algorithm?

How about the JPS units - anyone know the algorithms used for white noise reduction and pink noise reduction?

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1660. Satellite fax to HF fax converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-06 17:06:18 UTC
From: ve8ev@gov.nt.ca
Message-ID: <1994Jul6.170618.1515@gov.nt.ca>
Source record: 117400
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

Has anyone ever built a converter to change the AM wefax from NOAA satellites to FM wefax for reception with an HF fax demodulator? Is it possible? I'd like to be able to receive satellite photos direct from the satellites but don't want to spend another $XXX to buy a satellite wefax demodulator. I've found that by carefully tuning the signal from the satellite in SSB with a very narrow bandwidth I can copy the pictures a little bit but doppler shift makes this process very difficult. It would be much easier to receive the signal in FM from the satellite and convert the audio tone's amplitude modulations to frequency modulation and feed it to my HFFAX demodulator.
Alternately, is there software available to do the same thing with a simple interface?
Thanks,
John - VE8EV

==========
John Boudreau VE8EV INTERNET: ve8ev@amsat.org
Inuvik, NWT, CANADA PACKET: VE8EV@KL7GNG.#NAK.AK.USA.NA
==========

1661. Voice IDer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 00:57:38 UTC
From: GEITGEY%UKANVM.BITNET@vm42.CSo.uiuc.EDU
Message-ID: <199407070105.SAA17715@ucsd.edu>
Source record: 117401

Hi All,

Has anybody used one of those Hallmark greeting cards with the voice synthesizer, as a voice id'er for a repeater?

If so, what kind of circuit did you end up with? I am using a 555 timer, but am having trouble linking it to the repeater (Kenwood).

Any ideas would be greatly appreciated. A schematic would be even better, and would be shared with others who find this idea interesting.

TNX 73 de KB0LRB Lynn Geitgey
geitgey@ukanvm.cc.ukans.edu

1662. Decoding time data from WWVB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 02:38:44 UTC
From: gary@vulcan.com
Message-ID: <03k3oc2w165w@vulcan.com>
Source record: 117403

Hi:

Is anyone out there automatically decoding time data from WWVB (60 kHz) ?
I have built the 60 kHz receiver from the articles in 73 magazine earlier
this year, and have tried to detect the encoded time data.
Unfortunately, the noise level seems to be much greater than the signal ?
I was wondering if there was anyone out there that was doing this
already, and if so, would they care to exchange email messages.

Thank you
Gary Tennyson
KO4CY
gary@vulcan.com

Gary Tennyson
gary@vulcan.com

1663. Adding VOX to an HT mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 02:39:24 UTC
From: dismondo@metronet.com
Message-ID: <CsJu1p.BH3@metronet.com>
Source record: 117402

What is the best way to add VOX to an HT ? I have a throat mic for my HT that I use to go riding (bicycles) and I have to keep taking my hand off the bars to press the PTT button. I purchased a VOX kit only to find out that it requires an external 9v power source. The extra battery pack for the VOX circut makes it some what impractical (the radio is big enough the cause some minor placement problems already). Does any one know a better way ? I am using a kenwood 78A with the Genesys t-05 throat mic.

dismondo.

1664. Re: RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 05:56:04 UTC
From: ab4el@jabba.cybernetics.net
Message-ID: <2vg5dk$3d0@jabba.cybernetics.net>
Source record: 117416

In article <2vdlfq$lnj@news.tamu.edu>,
Chris Schmidt <cschmidt@diralect.me.pvamu.edu> wrote:

> I have a problem with RF feedback in my mic only when I touch
>the mic to my face while speaking. It seems that it is making the
>Radio Squeal. I have a RCI 2950 with a Texas Star DX 667V amplifier'
^^^

Am I behind the times? I've never heard of this HAM equipment?

>and a cheap Mag-mount base with a base loaded antenna with about
>a 3.5" whip on top. I do not have this problem when not using
>the amplifier. On AM it sqeuals when I talk. On SSB it is fine until
^^^^^^^^^^^ ^^^^^^^^

There's the occasional ham who switches between SSB and AM, but...

>I start talking and then it Stays keyed up and squeals for a few seconds then
>stops. I have had this problem with other Equipment too. But not this
>bad.
>
>.....
>73,
>
>chris <=== callsign???
>Houston tx.
>

Are we being asked to give advice on a KW amp for the Citizens Band?

Just curious, Chris?

Before I answer your question, would you tell me the frequency band
you are operating, since it makes a diffence in understanding
your equipment and antenna setup here.?

73 Steve AB4EL ab4el@Cybernetics.NET

1665. Re: AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 06:24:50 UTC
From: jerryg@teleport.com
Message-ID: <2vg73i$h0i@linda.teleport.com>
Source record: 117404

ALL-A-N Carhart (acarhart@netcom.com) wrote:
:Where might I find a make-your-own-AM-transmitter kit?
:If it is low enough power, the FCC allows transmissions on the AM band, correct?
: Why not hook up a CD player (or tape player or even FM radio) to a transmitter
: with the power to only go a few feet...

I hesitate to even utter the name in an amateur radio group, but you will find relevant discussions in alt.radio.pirate. The thread "Transmitter Kit Sources FAQ" mentions a number of sources for cheap ($30) micro-power FM stereo and AM transmitter kits including Ramsey Electronics (Victor NY), DC Electronics (Scottsdale AZ), and Panaxis Productions (Paradise CA). I have no idea if they are any good. Also threads on what's allowed under FCC rules.

FM radio would be a better bet for listening to CD's in your car, with an audio bandwidth of ~15Khz vs the ~5Khz of AM radio (plus you get stereo). Might be worth replacing the AM radio with a junkyard AM/FM one (~$10?).

Trashing some other guy's reception as you roll by can be avoided by carefully choosing an unoccupied channel. On FM, you could verify the channel is still unoccupied every 50 miles or so by briefly turning off your transmitter. Perhaps the transmitter could take it's power from the CD's motor circuit, and thus automatically shut off after each CD? Propagation of AM signals is less predictable, and at night you may occasionally find your radio howling due to interference from stations a thousand miles away.

These interferance issues could be avoided entirely by pulling the coaxial plug at the radio that runs to the antenna, and inserting your own plug with coax running to the transmitter (could add some switching arrangement, and may need to attenuate the transmitted signal).

---
jerryg@teleport.com Jerry Gaffke Portland Oregon USA

1666. Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 11:47:27 UTC
From: mike@io.org
Message-ID: <2vgq0f$2dk@ionews.io.org>
Source record: 117405
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I'm trying to understand how to operate a transistor in it's 'non linear'
region, as in frequency conversion/mixer circuits.

What kind of measurements, or calculations are required for a basic circuit?

Thanks for any info.

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

1667. Re: Low-Band RF Amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 13:03:28 UTC
From: uiahmed@uxa.ecn.bgu.edu
Message-ID: <2vguf0$m35@news.ecn.bgu.edu>
Source record: 117406

Victor Tavernini (tavernin@sun1.interlan.com) wrote:
: A while ago I remember seeing a series of articles posted by a fellow who
: built a low-band RF amplifier using inexpensive transistors ...

: I'd appreciate a copy of these articles since I've misplaced mine!

: Thanks,

: Victor Tavernini
: Racal-Datacom, Inc.

: tavernin@sun1.interlan.com

I am also looking for one. Can somebody mail it me.

Thanks

Khan
N7OLJ / AP2CW

1668. Vacuum Tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 13:53:07 UTC
From: zogg@valinor.mythical.com
Message-ID: <93i4oc1w165w@valinor.mythical.com>
Source record: 117219

I've recently acquired several *THOUSAND* old vacuum tubes. I don't have time to post a list of all the type I have available, but I have a great deal of pre-1950 stuff which may be of interest to antique radio restorers. Tubes such as: Arcturus Blue (a cobalt blue envelope - one of the first triodes..), Audion, DeForest, Westinghouse, etc. I also have a great deal of Mil-Spec tubes with metal envelopes. IF anyone is interested in these components, please reply here.
I also have a complete set of Radio Repair manuals from 1926-1955. I have virtually all photofacts available at that time. I'm building a 100W tube amp for my bass guitar and would love to swap ideas with someone (is this the correct forum?).
- Jean Bulot
- gt0280a@acme.gatech.edu
- zogg@valinor.mythical.com

Jean Bulot
Internet: zogg@valinor.mythical.com uucp: netcomsv!valinor!zogg
---

1669. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 15:27:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E1C2BE4@msmail.uthscsa.edu>
Source record: 117407

In Digest 185, Gary Tennyson (Gary@Vulcan.com) Wrote:

>Hi:
>
>Is anyone out there automatically decoding time data from WWVB (60 kHz) ?
>I have built the 60 kHz receiver from the articles in 73 magazine earlier
>this year, and have tried to detect the encoded time data.
>Unfortunately, the noise level seems to be much greater than the signal ?
>I was wondering if there was anyone out there that was doing this
>already, and if so, would they care to exchange email messages.
>
>Thank you
>Gary Tennyson
>KO4CY
>gary@vulcan.com
>
>Gary Tennyson
>gary@vulcan.com

Gary,
If you listen to WWV or WWVH on the hour or half hour they
give the address for information about all of their stations.
I don't remember it off the top of my head (I should since I
have heard it so much!) All you have to do is write to them
and ask for information about their stations. You will get more than
you will ever need! It is a really nice booklet (50 or so pages)
on all four of their stations (WWV WWVH WWVV WWVB.)

I think the address is:

National Institute of Standards and Technology Time
Radio Station WWV
8000 East County Road 58
Ft. Collins, CO 80524

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

```
** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **
------------------------------------------------------------------------
```

1670. need schematic/source for KENWD IF-10B

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 15:51:15 UTC
From: sia@access3.digex.net
Message-ID: <2vh89j$6r2@access3.digex.net>
Source record: 117412
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Greetings,

I am looking for the schematic for Kenwood's IF-10B (not -C, -D,
or other), and have called Kenwood, their parts supplier, and virtually
all the relevant advertisers in QST without any luck. It is a tiny
board that fits in the "control board (??) / processor" compartment of
a TS-940 and is used for external (computer) control of the rig.

IF-10B is a discontinued accessory, and I'm thinking of kludging one
together.

If anyone knows a source, or is willing to mail me a xerox copy, please
drop me some email.

I will gladly reimburse your copying/handling/shipping costs...

Regards;

//Siamack
73 de wj1q

==
Siamack Navabpour sia@access.digex.net

"Who he bends to himself a joy, will the winged life destroy,
But he who kisses the joy as it flies, will live in eternity's sunrise"
-- Willy Shakespeare

1671. Re: AM Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 16:02:57 UTC
From: mcleman@zso.dec.com
Message-ID: <mcleman.57.00100CB3@zso.dec.com>
Source record: 117414

If you look at the aftermarket CD players (changers) that mount in the trunk, they use an FM xmitter to get the CD sound through the stereo.

1672. Re: Voice IDer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 16:19:47 UTC
From: wa2sff@arch4.ho.att.com
Message-ID: <CsKw12.9yt@nntpa.cb.att.com>
Source record: 117410

I have built a voice ID unit for use in a hidden transmitter.
I used the halmark card.
I had no trouble coupling the output from the card in my Kenwood TH78A
HT.

A 555 timer causes the unit to ID every 30 sec to 5 min (depending on
trim pot value), and also dekeys the HT to reset its timer.

The project works great.

Joe Wilkes

1673. Old Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 16:22:31 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <2vha47$cf5@dawn.mmm.com>
Source record: 117409
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I am looking for the following parts:

Lamp GE1819
transistor 2N5490
Voltage Regulator (12v) 7812 (NC7812C or NC7812K)

Please email directly. Thanks for any help.
--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

1674. GPC algorithm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 16:46:38 UTC
From: fortado@clark.net
Message-ID: <2vhbhe$36g@clarknet.clark.net>
Source record: 117408

[No readable article body recovered]

1675. Re: Camcorder viewer needed.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 18:01:56 UTC
From: wb9omc@constellation.ecn.purdue.edu
Message-ID: <wb9omc.773604116@constellation.ecn.purdue.edu>
Source record: 117411
Cross-posted to: sci.electronics,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,ucb.digital-video,alt.radio.digital,sci.electronics.repair

dalep@crl.com (Dale Lukas Peterson) writes:

>Hello all-

>I am interested in making some "VR" glasses except instead of using small
>computer screens or whatever they are, I would like to use the small
>screen that is looked into when you use a camcorder. Does anybody have
>any idea where I could obtain these? I would appreciate addresses,
>phone#'s, and, prices. Thanx in advance.

Second this. I am working on a small CCD camera system and would
like a fairly small viewfinder for them, preferably one that requires
12 volts DC for supply....

Duane
wb9omc@harbor.ecn.purdue.edu

1676. Looking for coax relay

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 20:12:07 UTC
From: therbert@umiami.ir.miami.edu
Message-ID: <1994Jul7.161207.18016@umiami.ir.miami.edu>
Source record: 117417

This post is actually for my father, W6HJ, now
living near me in Miami,FL.

He has a couple of coaxial relays on a home built
transmitter - Used, of course to switch the antenna
when transmitting or receiving (1KW transmitter)

One of these relays is no longer working and
needs to be replaced.

Any suggestions for sources, new or used?

Thomas J. Herbert
University of Miami

therbert@umiami.ir.miami.edu
W6UGJ

1677. 403 MHz downconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-07 21:33:00 UTC
From: cbarrere@metgem
Message-ID: <7JUL199415334018@metgem>
Source record: 117413

Hello,

I recently purchased some radiosondes (devices which measure temperature, humidity, and pressure and are attatched to weather balloons) from an electronics warehouse. These instruments have a transmitter which operates at 403 MHz and transmitts a wide-band FM signal. The bandwidth is almost identical to that of a broadcast FM radio. What I am looking to build is a downconverter to bring the 403 MHz signal down to about 87 - 108 MHz. Are there any comercially available products which I could modify to do the job? Any ideas?? Thanks in advance.

Chip Barrere KC5DLP
School of Meteorology
University of Oklahoma
cbarrere@metgem.gcn.uoknor.edu

1678. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 00:54:21 UTC
From: jdow@BIX.com
Message-ID: <jdow.773628861@BIX.com>
Source record: 117415
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

mike@io.org (Mike Stramba) writes:

>I'm trying to understand how to operate a transistor in it's 'non linear'
>region, as in frequency conversion/mixer circuits.

>What kind of measurements, or calculations are required for a basic circuit?

>Thanks for any info.

>Mike
>--
>===
>Mike Stramba Email: mike@io.org
>Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
>===

Well, considering how hard it is to get a transistor, bipolar or FET, to run in a "linear" regime getting mixing action is no problem at all. In fact what you would do is remove *ANY* linearization tricks from the circuit such as an unbypassed emitter or source resistor.

To "predict" performance carefully either measure or estimate the curvature of the transfer function for largish signals. (The LO will clearly be a largish signal, nie?) Then take a Taylor series expansion on it. (Um, if you do not know what that is do a little extra credit reading.) This will give you a constant term plus a linear term plus terms for each "exponent" on the input voltage. FOr mixer action the interesting term is the squarelaw term. WIth that you can plug it into k*(a*sin(w1*t) + b*sin(w2*t))^2. Do your trig on this expression to extract the cos((w1+/-w2)*t) term (plus or minus depending on which mixer term interests you.) I recommend doing this at least once to get the "feel" for what is happening. (Actually I recommend specifically doing it for an LO signal which is large plus two smaller and equal level terms both on the same side of the LO and fairly close in frequency (radian frequency is w above.) This will give you an EXCELLENT idea of what IMD is all about if you fiddle with it a little.)

Once you have the appropriate expression for the terms of interest plug in some real values and see what you get. It should be fairly close if you get it right. (And I suggest FETs for the mixers. They have fairly close to square law input voltage to output current curves. Hence they tend to have better IMD (and hence crossmod) performance than bipolars.) And once you can get fairly close in predicting mixer performance you will be in a world few mortals ever seem to live. <^_-> (These days at least "mortals" can play with Spice and see results. But if they've never done the math they seldom have any idea WHY it works the way it does. Understand "why" and you can take the next step to

predictable control. THAT pays BIG bucks back when I was doing it. --- They just kept trying to ship my finger with the product.....)
<^_^> Joanne Dow, Amiga Exchange Editor
jdow@bix.com

1679. Tempo 2002 - HELP!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 04:07:54 UTC
From: Dave Quick <quick007@maroon.tc.umn.edu>
Message-ID: <92479.quick007@maroon.tc.umn.edu>
Source record: 117218

Help!

I recently purchased a used Tempo (Henry) 2002 2 meter kilowatt amplifier.
(Uses a pair of 8874 tubes in push-pull)

The amp was custom built by Henry to operate on 194 MHz, and was used in an
MRI lab. I'd like to move the amp back down to 144 MHz.

I have the only technical manual available, which covers the 2002, 2006,
and 6N2. It has a schematic diagram of the amp, but does not provide the
dimensions of the tank coil, (a "U" shaped section of 7/8" tubing)
or any pictorial of the input circuitry.

Does anyone out there have a Tempo 2002, or have experience
servicing one?

Thanks;

Dave Quick WD0EKL

Reply to quick007@maroon.tc.umn.edu
Packet Radio: WD0EKL@WB0GDB.#STP.MN.USA
CompuServe 75526,2656

"My hovercraft is full of eels!"
- John Cleese

1680. Re: Satellite fax to HF fax converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 07:40:47 UTC
From: schro@norton.sni.de
Message-ID: <2vivtv$eut@nanette.pdb.sni.de>
Source record: 117220
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

In <1994Jul6.170618.1515@gov.nt.ca> ve8ev@gov.nt.ca (John Boudreau) writes:

>Has anyone ever built a converter to change the AM wefax from NOAA
>satellites to FM wefax for reception with an HF fax demodulator?
[stuff deleted]

There was a circuit for an AM/FM converter in the german packet
mailboxes for reception of satellite pictures. It was used as a
frontend to the HamComm interface and JVFAX. The design is based on an
XR2206. If there is interest, i'll try to dig it up. Be warned, the
circuit description and alignment procedure is written in german.

73 Django
DL5YEC

1681. Re: Satellite fax to HF fax converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 09:45:53 UTC
From: schro@norton.sni.de
Message-ID: <2vj78h$6bd@nanette.pdb.sni.de>
Source record: 117221
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

In <1994Jul6.170618.1515@gov.nt.ca> ve8ev@gov.nt.ca (John Boudreau) writes:

>Has anyone ever built a converter to change the AM wefax from NOAA
>satellites to FM wefax for reception with an HF fax demodulator?
[stuff deleted]

There was a circuit for an AM/FM converter in the german packet
mailboxes for reception of satellite pictures. It was used as a
frontend to the HamComm interface and JVFAX. The design is based on an
XR2206. If there is interest, i'll try to dig it up. Be warned, the
circuit description and alignment procedure is written in german.

73 Django
DL5YEC

1682. Which VHF/UHF RSBG book is the one I want?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 14:19:48 UTC
From: os2user@vmdoug.utsd.att.com
Message-ID: <1994Jul8.141948.12201@devildog.att.com>
Source record: 117222

I heard that the Radio Society of Great Britain (RSGB) had published a good book on VHF/UHF. The book I was looking for has construction articles on building VHF and UHF downconverters, transmitters and receivers. Upon closer examination, however, I found that there are two books published by RSGB with "VHF/UHF" in the title. One is the "VHF/UHF DX Book" by Ian White and the other is "VHF UHF Manual RSGB" by G.R. Jessop. I can't figure out which one would have more articles on building and construction of VHF and UHF radio gear.

So which book is the one I want? Or do I want one of those Microwave handbooks?

Doug
doug@acpy01.utsd.att.com

1683. Re: 403 MHz downconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 14:45:06 UTC
From: clifmiller@aol.com
Message-ID: <2vjopi$k0@search01.news.aol.com>
Source record: 117223

In article <7JUL199415334018@metgem>, cbarrere@metgem (CHIP BARRERE) writes:

Chip -
I have used several of the downconverters built by Hamtronics - they are very flexible about tuning and use of different crystals - their telephone support is helpful and useful, also - they advertise in ham mags such as 73 and QST - 716-392-9430. Please note this is not a plug and play answer, but I didn't think that was what you were looking for - good luck, and let us know how it comes out... - Cliff / KC4HGR...

1684. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 16:16:11 UTC
From: steve@hi.com
Message-ID: <steve-080794120732@brainiac.hi.com>
Source record: 117224

In article <jdow.773628861@BIX.com>, jdow@BIX.com (jdow on BIX) wrote:
> To "predict" performance carefully either measure or estimate the curvature
> of the transfer function for largish signals. (The LO will clearly be a largish
> signal, nie?)

How does one measure the large-signal transfer function at HF?
High-bandwidth X-Y scope?

> (And I suggest FETs for the mixers. They have fairly close to square
> law input voltage to output current curves. Hence they tend to have better
> IMD (and hence crossmod) performance than bipolars.)

So FETs are better because of the absence of higher-order terms? I'm not
sure I follow the logic here.

Are the spice transistor models good enough to predict intermodulation
distortion?

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1685. type-C RF connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 16:19:07 UTC
From: steve@hi.com
Message-ID: <steve-080794121655@brainiac.hi.com>
Source record: 117225

I've just purchased a CU-1388/FLR-9 receiver multicoupler from Fair Radio. Fair's catalog says it has "type-C" RF connectors. I can't seem to find a reference to type C connectors anywere, much less a place to procure some. They look like overgrown BNC's. Anyone know what they are, and where I can buy some? (Maybe they're MHV's?)

Also, anyone know where I can get a manual for this beast? Or at least information on how I adjust the Balance and Voltage Adjust trimmers on the front panel?

Finally, the case is stamped "Do Not Operate Without Airflow". It seems to have been designed to get forced-air cooling from ducts in the 19" equipment rack. I'll have to rig up some fans, but I'd like to know the design pressure and flow-rate for the original cooling system.

Thanks,
-Steve

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1686. Re: Keyers and Positive/Negative keylines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 16:27:39 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Jul8122741@mipgsun.mipg.upenn.edu>
Source record: 117226
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

Thanks to those who answered my queries regarding positive and negative key lines.

Now let me explain the reason why I asked. Any suggestions would be most appreciated.

I built the basic CMOS Super Keyer II awhile back. My intent is to eventually have a keyer that is as compatible as possible to any sort of radio equipment out there. The basic CMOS Super Keyer II uses a 2N2222 (?) for a positive key line.

I reasoned that there are several possibilities out there:
1) the to the rig could be either a phone or a phono jack.
2) the rig could be positive or negative key line
3) an external power supply may or may not be available.
4) ????

For possibility 1, I put in phono and phone jacks when I originally built the unit.

For possibility 2: When I originally built the unit, I installed a DPDT switch for the purpose of switching between the two types of key lines. I built the MOSFET level converters (both positive and negative) in an old QST article. The positive was built on the off chance there is a rig out there that has a positive key line but draws a lot of current. These were built over the last two nights and tested. I have not yet been put into the keyer since I need to purchase a 2P3T switch. I would prefer to use the DPDT switch as I have plenty of them but the both ends of a nine volt battery needs to be switched so that I have +9V and -9V depending upon which level converter is on line. Further, I figured out the I need to use a switch on the output of the two level converters. For some reason, the level converter not on line seems to short out the output of the other level converter if both outputs are wired together. While I hope to figure out how to avoid using a switch here, I am resigned to spending the money.

For possibility 3: I inserted an extra RCA jack to put in +12V when I built the unit. I would have preferred to use the ARRL standard MOLEX plug for this purpose but didn't want to use up the real estate on the case and I have plenty of RCA plugs lying around. My plan is to use a 1N400x (i.e. whichever I happen to have lying around) in case the polarity of the external power supply is screwed up. From the looks of it, the +9V is not critical so I will either use a 7810 or a crowbar IC to power the positive level converter. A 7805 will be used

to power the keyer itself. The -9V for the is a bit more difficult but according to Horowitz and Hill, I can use a MAX632 (?) to get -12V. Unfortunately, I have no experience in using a switching regulator. I am hoping that the voltage drop due to the 1N400x will not screw up the MAX632; I don't have the data sheet. Hopefully, the output of a few hundred mils will be all that I need. I suppose I'll need some sort of relay to switch between the internal and the external power but I haven't even begun to figure what parts I will use.

An unexpected problem is that I started this project with a rather SMALL box and am afraid that I will run out of real estate. As it is, the box already has three layers. The lowest is the keyer circuit itself. The highest is the AA battery holder glued to the top of the box. I am hoping that I can squeeze the level converters in the middle. The 9V battery is squeezed on the side of the box. I have no idea where I can put the power supply circuits.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

1687. Re: Camcorder viewer needed.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 18:07:13 UTC
From: visions@news.gate.net
Message-ID: <2vk4kh$2pms@inca.gate.net>
Source record: 117227
Cross-posted to: sci.electronics,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,ucb.digital-video,alt.radio.digital,sci.electronics.repair

In article <wb9omc.773604116@constellation.ecn.purdue.edu>
wb9omc@constellation.ecn.purdue.edu (Duane P Mantick) writes:
>dalep@crl.com (Dale Lukas Peterson) writes:
>
>>Hello all-
>
>>I am interested in making some "VR" glasses except instead of using small
>>computer screens or whatever they are, I would like to use the small
>>screen that is looked into when you use a camcorder.
>...edited...
> Second this. I am working on a small CCD camera system and would
>like a fairly small viewfinder for them, preferably one that requires
>12 volts DC for supply....

I picked up three camcorder viewfinders at a surplus electronics store a
few years ago. They run off 12 volts, and are lightweight. I would
suggest you scan the electronic experimenter magazines for these type
places. The ones I got were only about $20 apiece, so you should be
able to find something at a reasonable price.

--
Ray Johnston / Digital Visions Corporation / Boca Raton FL / visions@gate.net
Voice (407) 362-0852 Fax (407) 362-0387

1688. Re: need info on Helical filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 18:10:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <8JUL199413105775@pavo.concordia.ca>
Source record: 117228

In article <2unma0$fdc@crl2.crl.com>, dmiller@crl.com (Donald J. Miller) writes...
>HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
>
>: There are a few more but these are the most common and should get you started.
>: BTW, the Zverev is out of print and is hard to find except in the reference
>
>How recent is your information? The Z book was out of print for quite some
>time, but they printed some more and I was able to buy one about 3 years
>ago... If your information is this old, look again -- If not, well maybe
>they are out of print AGAIN! I had to shell out about $105 though...
>--
>---
>Don Miller Electronic System Products
>dmiller@crl.com
>---

It is entirely possible that there has been a reprint, I have not checked. But $105.....yeeeeeooooooowwwch! it's a GREAT book but....

Mark

1689. HP manual?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 19:20:15 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Jul8.132015.1@ccsvax.sfasu.edu>
Source record: 117229

If this is a FAQ, please accept my apology in advance:

Can someone tell me the best source for an operator's and/or service manual for a recently military surplus HP scope?

If the answer is HP themselves, could you also say which of their 10**9 phone numbers is the most likely one?

Thanks much!

73,
Jim,
K5YUT

1690. Re: Keyers and Positive/Negative keylines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 20:32:19 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Jul8163221@mipgsun.mipg.upenn.edu>
Source record: 117230
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

>purchase a 2P3T switch. I would prefer to use the DPDT switch as I
^^^^

Oops I meant triple pole double throw.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

1691. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 21:15:46 UTC
From: jdow@BIX.com
Message-ID: <jdow.773702146@BIX.com>
Source record: 117232
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

steve@hi.com (Steve Byan) writes:

>In article <jdow.773628861@BIX.com>, jdow@BIX.com (jdow on BIX) wrote:
>> To "predict" performance carefully either measure or estimate the curvature
>> of the transfer function for largish signals. (The LO will clearly be a largish
>> signal, nie?)

>How does one measure the large-signal transfer function at HF?
>High-bandwidth X-Y scope?

>> (And I suggest FETs for the mixers. They have fairly close to square
>> law input voltage to output current curves. Hence they tend to have better
>> IMD (and hence crossmod) performance than bipolars.)

>So FETs are better because of the absence of higher-order terms? I'm not
>sure I follow the logic here.

>Are the spice transistor models good enough to predict intermodulation
>distortion?

>Steve Byan internet: steve@hi.com
>Hitachi Computer Products (America), Inc.
>1601 Trapelo Road phone: (617) 890-0444
>Waltham, MA 02154 FAX: (617) 890-4998

Enh - approximate by measuring at DC. It worked quite decently, although it helps in designing anything to have a rough knowledge of the parasitic caps involved.

FETs are indeed better because the higher-order terms, which are sadly ALWAYS with us, are very much smaller than they are in bipolars with their exponential characteristics. (TO reasonable first approx bipolars are exponential V to I devices while FETs are square law V to I. The IMD and such comes from other terms.)

Re spice models vis a vis IMD: I dunno - I built my own small signal circuit analysis proggy long ago and did large signal analysis almost purely from "first principles" and data sheets. With experience I got pretty good at it. (And developed a firm liking for a matched quad of Siliconix 2N5397's (or a matched pair of U310s if I remember part numbers from back then) in a double balanced active mixer with LO on the gates. I'd set 'em up for about zero dB power gain. I'd get decent NF, maybe 1dB more than a "noiseless" mixer, and VERY good IMD intercept points. RF amps were a push-pull grounded gate pair of matched 2N5397s. Combo gave a quite low NF and an 80dB IMD rejection relative to 1uV. (Note that this measure is what the military insisted on rather than the IMHO shoddy amateur practice of referencing to sensitivity

level.) - Oh - this 80dB also included the muck that came from the antenna amp plus its 32 way power splitter in the 2 transistor version of the mixer I used in a sonobouy project at 170ish MHz. It was quite repeatable.)

(BTW - I am dredging some of these numbers out of darker recesses of my mind rather than darker recesses of my file cabinet at home. I'm lazy. <^_-> The quad balanced puppy was CONSERVATIVELY 80dB relative to a uV at the input of a 10dB gain preamp.)
<^_^> Joanne Dow, Amiga Exchange Editor
jdow@bix.com

1692. Re: Old Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-08 21:42:02 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <2vkh7a$bek@ohlone.kn.PacBell.COM>
Source record: 117231
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tahir Kayani (tahir@tcdsp1.mmm.com) wrote:
: I am looking for the following parts:

: Lamp GE1819
: transistor 2N5490
: Voltage Regulator (12v) 7812 (NC7812C or NC7812K)

The 7812 is sometimes available inside the assorted voltage regulator ICs package from your local Radio Snack store.

The GE 1819 lamp is a 28V, .04A, .34 candlepower (appx) lamp, in a miniature bayonet base. It's rated at 2500 hours avg life. If I remember right, Radio snack also had a similar lamp. I bought a package of two to use as the non-linear resistance element of a Wien Bridge oscillator. I put one in and it was intermittent. I took it out and put the other one in and it had the same problem. So I took them back and exchanged them for another pack. But they still were intermittent. Apparently the filament leads weren't crimped adequately. The lamps would light because the heat would make it weld, but it wasn't any good at low currents.

The transistor is a standard JEDEC number so it should be easy to find a replacement part number from ECG, etc.

: Please email directly. Thanks for any help.
: --
: **
: * The opinions expressed are mine and do not reflect the views of*
: * Twinix Systems Inc. or 3M. *
: **

--
@@
@ John Lundgren - Elec Tech - Info Tech Svcs @ Standard @
@ Rancho Santiago Community College District @ disclaim- @
@ 17th St. at Bristol \ Santa Ana, CA 92706 @ ers apply.@
@ Voice (714) JOHN GAB \ FAX (714) JOHN FRY @ @
@ jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu @ @
@@

1693. Re: Camcorder viewer needed.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 03:08:03 UTC
From: k9ape@eecs.nwu.edu
Message-ID: <CsnKpF.817@eecs.nwu.edu>
Source record: 117233
Cross-posted to: sci.electronics,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,ucb.digital-video,alt.radio.digital,sci.electronics.repair

In article <wb9omc.773604116@constellation.ecn.purdue.edu>,
Duane P Mantick <wb9omc@constellation.ecn.purdue.edu> wrote:
>dalep@crl.com (Dale Lukas Peterson) writes:
>
>>Hello all-
>
>>I am interested in making some "VR" glasses except instead of using small
>>computer screens or whatever they are, I would like to use the small
>>screen that is looked into when you use a camcorder. Does anybody have
>>any idea where I could obtain these? I would appreciate addresses,
>>phone#'s, and, prices. Thanx in advance.
>
> Second this. I am working on a small CCD camera system and would
>like a fairly small viewfinder for them, preferably one that requires
>12 volts DC for supply....
>
>Duane
>wb9omc@harbor.ecn.purdue.edu
>

We sell minature SONY cameras and monitors that will probably meet your
requirements. Please send your specifications.

Sheldon L. Epstein, k9ape@eecs.nwu.edu
Chief Engineer
Epstein Associates
P.O.B. 400
Wilmette, IL 60091-0400
U.S.A.

708:853-1084 - Voice & V-Mail
708:251-3114 - FAX

1694. Re: Vacuum Tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 03:11:04 UTC
From: mervins@aol.com
Message-ID: <2vl4g8$b49@search01.news.aol.com>
Source record: 117234

In article <93i4oc1w165w@valinor.mythical.com>, zogg@valinor.mythical.com (Jean Bulot) writes:

Okay, I am interested in your tubes (some, not all!); what do you have in mind?

1695. Re: 403 MHz downconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 04:19:06 UTC
From: haymoree@newt.ee.byu.edu
Message-ID: <2vl8fq$s4p@bones.et.byu.edu>
Source record: 117235

CHIP BARRERE (cbarrere@metgem) wrote:
| I recently purchased some radiosondes (devices which measure temperature,
| humidity, and pressure and are attatched to weather balloons) from an
| electronics warehouse. These instruments have a transmitter which
| operates at 403 MHz and transmitts a wide-band FM signal. The bandwidth
| is almost identical to that of a broadcast FM radio. What I am looking
| to build is a downconverter to bring the 403 MHz signal down to about
| 87 - 108 MHz. Are there any comercially available products which I could
| modify to do the job? Any ideas?? Thanks in advance.

The ARRL Handbook has a project to convert 440 to the 10m band and vice
versa -- the downconversion part is rather simple. It shouldn't be too
hard to modify it for what you need.

--
Ed Haymore | Duct tape is like the Force. It has a light side
ed@byu.edu | and a dark side, and it holds the universe together.

1696. Re: Which VHF/UHF RSBG book is the one I want?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 06:53:16 UTC
From: monta@pixel.mit.edu
Message-ID: <MONTA.94Jul9025316@pixel.mit.edu>
Source record: 117236

os2user@vmdoug.utsd.att.com writes:

> ... One is the "VHF/UHF DX Book" by Ian White and the other is "VHF
> UHF Manual RSGB" by G.R. Jessop. I can't figure out which one would
> have more articles on building and construction of VHF and UHF radio
> gear.
>
> So which book is the one I want? Or do I want one of those Microwave
> handbooks?

I haven't seen the "DX Book", but I might as well chime in about
the Jessop book---it's a good read, and I found a lot of useful
detail.

Peter Monta monta@image.mit.edu
MIT Advanced Television Research Program

1697. subscribe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 11:56:21 UTC
From: hnelson@facstaff.wisc.EDU
Message-ID: <21383.hnelson@facstaff.wisc.edu>
Source record: 117237

```
subscribe
hnelson.facstaff.wisc.edu
```

1698. Re: Adhesive for lawn mower resistor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 12:21:51 UTC
From: jbromley@sedona.intel.com
Message-ID: <2vm4ov$2pe@chnews.intel.com>
Source record: 117238

In article <2unk20$e13@news.u.washington.edu>,
Roger Fulton <roger@wrq.com> wrote:

>there is a large (5 ohm, 20 watt, I believe) block-shaped
>resistor that I need to re-attach to the side of the motor
>housing. It was originally attached with an off-white,
>rubbery adhesive. This adhesive isn't silicone or RTV. From
>my former life as an electronics technician (MANY years ago),
>I vaguely remember something called (I think) potting compound
>that was used for this purpose. As I recall, this stuff not
>only had adhesive properties but also could help act as a
>heat sink. (Note that I'm NOT talking about the greasy, white
>heat sink stuff you use when mounting such things as power
>transistors.)

You might check into using dental adhesive. It is extremely
strong and has good heat conducting properties. It is NOT
flexible, however. So if you need shock-absorbing ability,
this stuff may not work.

Jim Bromley, W5GYJ <jbromley@sedona.intel.com>

1699. CB sets to 10 meters and 6 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-09 15:06:13 UTC
From: wa2sff@arch4.ho.att.com
Message-ID: <CsoHyE.AxF@nntpa.cb.att.com>
Source record: 117239

I know that the FCC required CB manufacturers to fix the PLL chips so that out of band mods are "impossible." But given the success in mod'ing scanners and cellular phones, I assume some cb sets must be easy to mod.

I have seen postings before but no real info. Are there any good CB sets to buy and modify for the 28.0-29.7 band? My ultimate goal is to put one on six meters.

I know that the Uniden 2510 and 2600 are good choices they seem to have high prices at Hamfests. I assume the real market for those radios is the freebanders not hams.

Please no flames as I am asking this question as a ham (>30 years) and do not plan to work the freeband with the info. Anyone can check my address in the call book and call me at home. I have a listed number. Also notice the originating address (company and login id).

I would like to swap information with anyone with ideas to build or modify a rig for 6 meters. I have no interest in kits that don't work.

I think there are opportunities:

1) for designing a low cost kit that works for 6 meters,

2) writing a magazine article about the kit, and

3) Writing an article about modifing radios for 6 meters.

I have no hope that Uniden will have a 6 meter version of the 2600 since I don't think most 2600's are sold to hams.

Joe Wilkes
WA2SFF

1700. Re: CB sets to 10 meters and 6 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-10 04:32:21 UTC
From: Thomas Xydis <tgxydis@delphi.com>
Message-ID: <hu5Rhh1.tgxydis@delphi.com>
Source record: 117240

Joe,

There were several good articles in 73, etc in the early 80's and late 70's for converting the so-called Hy-Gain boards. These were surplus PCB version partially assembled CB rigs that were apparently built up for the anticipated CB boom (you know, that trucker song, etc.) These mods are easy to make for 10 meters, I helped some people get some of those going. They work for 10M AM and FM, but not SSB. I also don't think that 6M was addressed.

a crystal mixed SSB radio. These were not PLL synthesized but just mixed crystals. Just some algebra and new crystals and your there to 10M anywa. I also did one of those and it worked well. But now I have a 2600 which works even better (more that 40 channels.)

As for 6M, I would try to roll one from scratch. Ramsey makes a 6M FM kit though.

Have Fun and 73,

Tom Xydis KC9DM tgxydis@aol.com

1701. Modem chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-10 14:56:02 UTC
From: dudley@pinn.net
Message-ID: <2vp262$6bq@everest.pinn.net>
Source record: 117241

I want to build a packet modem, but I am at aloss where to find the modem chip. One drawing I have shows a TCM 3105.... where can I find it? Also there are other chips that would work, but for which I have no schematic or tech. doc. for the chip.... Can anyone email me the data? Thanks in advance.

--
=:|\Pinnacle Online - Open and dynamic Internet services:=
=:|o\. | | | ______ :=
=:|_/||\ ||\ | |\.| __ | Voice: 804/498.3889 email: info@pinn.net:=
=:| || \|| \| o | \| _ .| Data: 804/498.9762 login: guest or new :=

1702. Re: CB sets to 10 meters and 6 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-10 16:27:23 UTC
From: wa2sff@arch4.ho.att.com
Message-ID: <CsqGDn.DFs@nntpa.cb.att.com>
Source record: 117242

I have 5 working Hygain boards and have most of the articles from the 70s and 80s on modifying them. I also have the 10 meter FM book my Heil. I have put some of the boards on ten meters.
I have found them touchy. Some move straight forwardly and others just don't seem to want to work when moved. I am looking for some more modern designs to play with.

I have a PH.D in EE and have extensive experience in designing/modifying my own equipment. I am also very familar with PLL design as I have worked with them over the years and have moved other PLL radios. If I have trouble putting some of the boards on ten meters how does someone with less knowledge do it?

I am aware of the RAMSEY kit but would like to find some one who has a working one. I still see postings of the order of "I built the RAMSEY kit but it only has 1 watt output instead of 5 how can I get it up to 5 watts? etc., etc., etc."

In spite of the problems, I am tempted to buy one for the ideas/parts to build something that works.

Any thoughts on modifications or new designs would be appreciated.

Joe Wilkes

1703. Wanted: May 94 issue of Popular Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-10 20:28:32 UTC
From: solso@prairienet.org
Message-ID: <2vpllg$o3e@vixen.cso.uiuc.edu>
Source record: 117243

Does anyone have the May 94 issue of Popular Electronics?? If so, please email folson@prairienet.org, not me!! Thanks

--
Stan Olson email:solso@prairienet.org
P.O. Box 1122
Champaign, Il. 61824-1122
U.S.A.

1704. TenTec 2m kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 00:57:43 UTC
From: XTL00014@DUVM.OCS.DREXEL.EDU
Message-ID: <2vq5e7$gf@dunx1.ocs.drexel.edu>
Source record: 117244

Does anyone know anything about the TenTec 2m mobile kit?
73 de N3RCS es gd DX
Adam O'Donnell, xtl00014@duvm.ocs.drexel.edu, PhilMont MRC member.

1705. Mag's and LCD displays

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 03:48:45 UTC
From: c9422948@alinga.newcastle.edu.au
Message-ID: <CsrBxA.8ro@seagoon.newcastle.edu.au>
Source record: 117247

FOR SALE:-
Magazines:-

Amatuer Radio Action (ARA)
22 issues Sept '92 - June '94
Worth $70

Electronics Austrlia (EA)
24 issues July '92 - July '94
Worth $100

Silicon Chip (SC)
21 issues Oct '92 - June '94
Worth $80

2 Hitachi Monochrome LCD dot matrix displays 128 x 64 pixels (maybe 256 x
128, I haven't gopt the stats on me, I'll post them on request)

Please make an offer directly to my E-mail address or auction for them here.
I'll sell Magazine titles seperately, but not individual issues.

Logic will take you only so far... Insanity will take you all the way...

Quantum (Graeme Russ) :- c9422948@alinga.newcastle.edu.au
University of Newcastle, Australia

1706. ** FLEA at MIT ** Sunday July 19 Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 04:03:56 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <2vqgbc$bgd@senator-bedfellow.MIT.EDU>
Source record: 117245
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

Now TWICE as many outdoor Tailgate spaces are available...

********* $1 buyers discount with hardcopy of this notice ********

COMPUTERS - ELECTRONICS - HAM RADIO - COMPUTERS - ELECTRONICS

FLEA all SUMMER at MIT
July 17th, 1994
9AM-2PM

Come to the city for a great flea - plenty of free parking.

MIT's electronics and ham radio flea will take
place on the third Sunday of each month this summer,
April thru October.

There is tailgate space for over 600 sellers and
free, off-street parking for >1000 cars!

Buyers admission is $2 (you get $1 off if
you're lucky enough to have a copy of our ad)
and sellers spaces are $10.00-each at the gate.

The flea will be held at the corner of Albany and
Main streets in Cambridge; right in the Kendall
Square area from 9AM to 2PM, with sellers set-up
time starting at 7AM.

!! RAIN or SHINE !! Have no fear of rain, a covered
tailgate area is available for all sellers (6'8" clearance).

Talk-in: 146.52 and W1XM/R-449.725/444.725 (PL 114.8/2A).

Sponsors: MIT Electronics Research Society
MIT UHF Repeater Association (W1XM)
MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ************

****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

1707. RadCom in library

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 05:36:49 UTC
From: faunt@netcom6.netcom.com
Message-ID: <FAUNT.94Jul10223649@netcom6.netcom.com>
Source record: 117246

Does anyone know of a library in the SF Bay Area that subscribes to
RadCom?

1708. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 08:30:10 UTC
From: M.Willis@ee.SUrrey.ac.UK
Message-ID: <9407110930.aa16788@argos.ee.surrey.ac.uk>
Source record: 117248

You want the VHF Handbook, but beware, it is going to be replaced very soon with a new edition. The DX book is also very good but not for the USA as we have different bands and power limits in Europe. A lot still applies but a lot does not.

73 Mike

1709. My List of Mail Order Electronics Companies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 13:33:09 UTC
From: jfw@ksr.com
Message-ID: <2vrhml$d97@hopscotch.ksr.com>
Source record: 117251
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.info

A long-delayed update, as usual :-).

[$Revision: 2.17 $; last updated July 11, 1994]
[Author: John Woods, WB7EEL, jfw@ksr.com, jfw@jfwhome.funhouse.com]

Here is my list of companies which will sell electronic components in small quantities. Many of these places I have bought from, several I haven't. Being a ham radio operator, I am most interested in RF components, and in particular, air variable capacitors, which tend to be scarce (and tend to be used or surplus even if I've otherwise labelled the seller as "NEW").

Categories are:
NEW COMPONENTS Distributors and sellers of new components, or "new and some used" in a couple of cases.
SURPLUS ELECTRONICS Usually overstocks, occasionally used equipment. Ideal for stocking the junkbox, usually have dependable stock lines of resistors, capacitors, and some semiconductors, but won't have those LCD modules forever... An invaluable resource, don't shy away from them.
SPECIALTY COMPONENTS In particular, crystals and toroidal cores.
KITS Ham radio kits, random electronic kits, whatever they have.
LITTLE GUYS Separated out because of some twisted sentimentality, I suppose. Intended to honor one or two ham spare-bedroom operations. Note that sending $1 along with catalog requests is a big help for these folks.
PUBLICATIONS A small selection of publications dealing with electronics, especially RF electronics.
QRP CLUB PUBLICATIONS Clubs for low-power amateur radio enthusiasts; frequently have publications with quite a bit of technical content (which is why I'm a member of QRP clubs headquartered thousands of miles from where I live :-). Note, this is generally practical technical content (how to build it) rather than theoretical technical content (why it works), but definitely more than Contester's Quarterly.

Note on shipping costs: I don't always update these frequently enough, and they're generally for continental US unless otherwise mentioned.

NEW COMPONENTS:

Digi-Key
701 Brooks Ave. South
P.O.Box 677
Thief River Falls, MN 56701-0677
+1-800-DIGI-KEY (334-4539)

+1-218-681-3380 (FAX)
No minimum, $5 handling under $25, free and very complete catalog, very nice indeed. Prices aren't always the best, but rarely excessive. Weak on RF specialty parts (though they now have the ever-popular NE602AN), but they do have blue LEDs.

Mouser Electronics Mouser Electronics Mouser Electronics
11433 Woodside Ave. 2401 Highway 287 North 12 Emery Ave.
Santee CA 92071 Mansfield TX 76063 Randolf NJ 07869
Mouser Electronics
370 Tomkins Court
Gilroy CA 95020
Catalog Subscriptions: (800) 992-9943 (Continental US only)
Sales & Service: (800) 34-MOUSER (800-346-6873) (US, Puerto R., Canada)
Very complete catalog of brand-new components (though no air variables). Usually quick service, $20 "minimum" ($5 charge under $20). When ordering, you may want to be sure to ask about availability and shipping locations; they have several warehouses, and frequently orders will get sent from several warehouses (which drives up the shipping costs). Export orders have a $100 minimum, except for Canada and Mexico.

Ocean State Electronics
P.O. Box 1458
Westerly RI 02891
+1-800-866-6626 (orders)
+1-401-596-3080
+1-401-596-3590 (FAX)
Minimum $5, S&H $4, free catalog. Wide array of RF parts, especially air variables and B&W coils.

Radiokit (store is located at:)
P.O.Box 973 169 Jeremy Hill Rd.
Pelham NH 03076 Pelham NH 03076
+1-603-635-2235
+1-603-635-2943 (FAX)
No minimum ($3 service charge if under $20), many kits, lots of J. W. Miller chokes & coils, B&W coils, RF switches, Millen variable capacitors, lots of parts in general. As of 24-Feb-94, they are again STILL out of catalogs, and just barely might have one by Dayton this year. They do accept mail orders, but you'll have to call for prices and availability. A classified ad in 3/94 QST says "Call/SASE", I guess they may have fliers.

Circuit Specialists Inc
P. O. Box 3047
Scottsdale AZ 85271-3047
+1-800-528-1417
No minimum with check or money order, $15 otherwise. $3 S&H.
New electronics, good RF assortment, increasing infestation of computers.

Active Electronics
11 Cummings Park 237 Hymus Blvd
Woburn MA 01801 Pointe Claire, Quebec, H9R 5C7

+1-800-677-8899 (Main number for US and Canada)
+1-514-630-7410 (International)
+1-514-697-8112 (FAX)
$25 minimum, $5 S&H UPS, catalog has a "$10 Suggested retail price" but they sent mine for free. They have 7(?) stores in the US (Chicago IL; Baltimore MD; Woburn MA; Detroit MI; Mt. Laurel NJ; Long Island NY; Seattle WA) and 10 stores in Canada (Quebec City; Montreal (2); Ottawa; Mississuaga; Winnipeg; Calgary; Toronto; Edmonton; Vancouver BC). Each store has its own 800 number and FAX number, call the main number(s). International orders are to be mailed to the Canadian address, but they want payment in US funds! Lots of stuff, oriented more toward supplying last-minute requirements of companies than hobbyists, but perfectly happy to take your money in small doses (stores have no minimum order). The $25 minimum for certain items is no longer explicit, but they note that some items will "ship in factory minimum package quantities", which might be worse.

Maplin Electronics Ltd.,
P.O. Box 3,
Rayleigh,
Essex,
SS6 8LR
U.K.
Phone numbers: your international code +44 702 554161 for sales
+44 702 553935 Fax
+44 702 556001 Tech enquiries(2-4pmGMT)
"Over here [in the United Kingdom] the main hobbyist electronics supplier is Maplin Electronics who stock a wide variety of equipment. They have a catalogue which can be shipped for 10.65 pounds sterling by air or 5.50 pounds sterling by surface mail. They accept Mastercard, American Express and International Reply Coupons. They have at least one type of air-filled variable capacitor!" (Thanks to Kev White at Cambridge University).

Newark Electronics
Send catalog requests to:
Newark Electronics
ATTENTION CATALOG DEPARTMENT
4801 N. Ravenswood Ave.
Chicago IL 60640-4496
+1-312-784-5100
They don't have a single mail address or phone; instead, one is supposed to call the closest of three pages worth of branch offices. I don't feel like typing in the entire list (it's copyrighted, anyway :-), so send email for your "local" distributor, or call their administrative offices at the number above. They have a $25 minimum order; they are a Real Distributor, but accept small orders (over the minimum, of course). Their catalog currently 1488 pages; they are very complete (except, of course, for my favorite scarce item, the air-variable capacitor). Note that the catalog prices tend not to match reality all that often, so order by phone rather than by mail; prices tend to be higher than other places, but they have a lot of things that are hard to find from other outlets. Also note that they have six Canadian offices, and one UK office, and will take international orders

at 500 N. Pulaski St., Chicago IL 60624-1019, +1-312-784-5100
(FAX +1-312-638-7652, TLX 6718690 NEWARK U).

Arrow Electronics, Inc. Catalog requests to:
Catalog Division Catalog Division
1860 Smithtown Ave. 25 Hub Drive
Ronkonkoma NY 11779 Melville NY 11747-9828
+1-800-93-ARROW
Minimum $25; they no longer have a catalog. They are a Real Distributor, but also didn't mind my placing a personal order (a couple of years ago).

MCM Electronics
650 Congress Park Drive
Centerville OH 45459-4072
+1-800-543-4330
+1-800-824-TECH (product questions)
+1-513-434-6959 (FAX)
Minimum $20 ($25 for charge cards, and they don't take personal checks), handling $1.95 + shipping. Oriented toward repair technicians, really heavy on VCR parts and somewhat overpriced doodads, lots of useful stuff not easily found elsewhere.

Fordham Radio Supply
260 Motor Parkway
Hauppauge NY 11788-5134
+1-800-695-4848
Tools for technicians. One or two items are not outrageously overpriced.

Jameco
1355 Shoreway Road
Belmost CA 94002
+1-800-831-4242
+1-800-237-6948 (FAX)
+1-415-592-8097
No longer have a minimum order, reasonable selection of parts again (in addition to computer components).

JDR Microdevices Just moved!
1850 South 10th Street
San Jose CA 95122-4108
Orders: +1-800-538-5000
+1-408-494-1400
FAX: +1-800-538-5005
+1-408-494-1420
Cust. Service: +1-800-538-5001
Tech Support: +1-800-538-5002
BBS: +1-408-494-1430
No minimum, $5+ shipping. Mostly computers now, but they haven't yet decided to abandon components; indeed, they recently dropped their minimum order requirement entirely.

Johnson Shop Products
P.O.Box 160113
Cupertino CA 95016
+1-408-257-8614
+1-408-253-6288 (FAX)
Catalog $1. No minimum. Shipping charge is based on UPS; very small orders that can be sensibly shipped in a first-class letter, include money for first-class postage. New and some used electronic parts.

DC Electronics
P. O. Box 3203
Scottsdale AZ 85271-3203
+1-800-423-0070 (orders)
+1-602-945-7736 (stock/price checks)
+1-602-994-1707 (FAX)
$15 minimum charge order, no minimum for checks, $3 min. shipping&handling. Wide array of ICs, good assortment of electronic components.

EasyTech Inc *** out of business? ***
2917 Bayview Drive
Fremont CA 94538-9932
11 May 93: "EasyTech no longer has an 800 number, and has dropped several lines. The last time I called them (2 months ago), I got the impression they were slowly going down the tubes..." - dts@banyan.com "Both of their 800 number and the customer services numbers are disconnected, and no new numbers are given." - lau@gandalf.rutgers.edu

International Components Corporation
1803 NW Lincoln Way
Toledo OR 97391-1014
+1-800-325-0101 (US & Canada)
+1-503-336-4400 (FAX)
Cabinets&Enclosures; Capacitors; Diodes; ICs; Potentiometers; Resistors; Sockets; Transistors; Books. No minimum order, $2 handling under $25.

Kelvin Electronics
7 Fairchild Ave.
Plainview NY 11803
+1-800-645-9212
+1-516-349-7620
+1-516-349-7830 (FAX)
Minimum order $20; S&H 5% of order ($5 minimum, extra for large stuff, overnight, export (like to Hawaii :-), and etchant; based on UPS charges). Lots of electronic parts & tools, some robotics supplies, model rockets.

H & R Company (Herbach and Rademan)
18 Canal Street, P.O.Box 122
Bristol PA 19007-0122
+1-800-848-8001 (Orders)
+1-215-788-5583
+1-215-788-9577 (FAX)
Minimum order $25 ($5 processing charge under $25), shipping $4.75 under $30; Most items are new overstocks, much regularly stocked stuff as well. Tools,

electrical supplies, motors, mechanical components, robotic components.

John Birkitt
1, The Strait, Lincoln
+44 522 520767
Lots of stuff for the practical enthusiast. Many bargains to be had if you've the patience to sort through the extensive heaps of assorted electronic miscellany. Good stocks of new components, tools and books, masses of RF gear and very competetive prices.
Two shops side by side cater for the "consumer" type goods and the "electronics" type. Does mail order, takes visa/access etc. Mail order list contains lots of unusual goodies that you'll possibly never see on offer anywhere else. (thanks to Dave Walster @ lincoln.gpsemi.com)

N R Bardwell
Abbeydale Road, Sheffield
+44 742 552886
Possibly the busiest electronics emporium I've ever visited. Specialises in radio gear and alarm equipment but many of the obligatory bags of "unmarked, untested" goodies makes Bardwell's *the* place to go. Friendly, efficient and knowledgeable staff. Cheap. Very cheap. Thriving mail order business with some good bargains in IC's and discrete's. Write/phone for a price list. (thanks to Dave Walster @ lincoln.gpsemi.com)

SURPLUS ELECTRONICS:

All Electronics Corp.
P. O. Box 567
Van Nuys CA 91408-0567
+1-800-826-5432
+1-818-904-0524
+1-828-781-2653 (FAX)
$10 minimum, $4.00 S&H. New and surplus electronics.

Alltronics
2300 Zanker Road
San Jose CA 95131
+1-408-943-9773
+1-408-943-9776 FAX
Surplus electronics. $12 minimum, shipping per UPS.

American Science and Surplus (formerly JerryCo)
P.O. Box 48838
Niles IL 60714-0838 ### New address.
+1-708-475-8440
+1-708-864-1589 FAX
Surplus. *The* surplus place. Lots and lots of surplus. WWII gun cameras, velcro, laser disk chassis, 6 volt VW wipers motors, LEDs, rubber brains, you name it, they've had it. Catalogs are a really good time.
$12.50 minimum order (which includes the $4 shipping charge).

BCD Electro ### Out of the mail order business!
P. O. Box 450207
Garland TX 75045-0207
+1-214-343-1770
According to Barrie Britton (24 Feb 94), BCD has gone out of the mail order business.

Fair Radio Sales
P. O. Box 1105
1016 E Eureka St.
Lima OH 45802
+1-419-227-6573
Surplus electronics. Heavy on parts for old Collins gear.

Hosfelt Electronics
2700 Sunset Blvd.
Steubenville OH 43952
+1-800-524-6464
+1-614-264-5414 (FAX)
No minimum, $3.75 S&H. Surplus electronics.

HSC Electronic Supply (Halted Specialties Co.)
3500 Ryder Street
Santa Clara, CA 95051
+1-800-4-HALTED Orders only
+1-408-732-1573 inside California and outside US
Surplus (new) electronics; new and used test equipment. Minimum order $10 ($2 handling charge under $20), plus UPS shipping cost. Has three stores, of which 3500 Ryder Street is one.

Marlin P. Jones & Assoc.
P.O. Box 12685
Lake Park FL 33403-0685
+1-407-848-8236
+1-407-844-8764 (FAX)
No minimum ($1 fee for under $10), shipping per UPS. Surplus electronics.

R&D Electronics
1224 Prospect Ave.
Cleveland OH 44115
orders: +1-800-642-1123 (tues - fri 9am-4pm sat. 9am-3pm EST)
info: +1-216-621-1121
fax: +1-216-621-8628
$10 minimum. Surplus electronics.
"Also known to stock many components, but this is not discussed in the catalog. Local store, a cleveland institution, is called Electronic Surplus, Inc., and has been there since '48. Third generation now runs it." -- wb8foz

Surplus Sales of Nebraska
1502 Jones Street
Omaha, Nebraska 68102
+1-402-346-4750
+1-402-346-2939 (FAX)

New and surplus radio electronics. Wide selection: air variables.
Catalog $3 (free with order, refundable with $25 catalog purchase).

Tucker Surplus Store
1717 Reserve St.
Garland TX 75042
+1-800-527-4642 extension 135
Surplus electronic gear; oscilloscopes and signal generators from the days when dinosaurs with vacuum tubes roamed the earth (some solid state gear, but all well used). Prices seem relatively high, and you'll be shocked to learn how much it costs to ship a 75 pound oscilloscope by motor freight...
[Steve Brown, N8HFI:
In defense of Tucker, the have a broad selection, repair facilities, and they certify the used equipment to meet the original specification and warranty it for 90 days. Not every source does this:]

Davilyn Corp.
13406 Saticoy St.
North Hollywood, CA 91605-3475
+1-800-235-6222 (Ex. CA)
+1-818-787-3334 (CA)
+1-818-787-4732 (FAX)
Surplus electronic gear.
[has much better prices [than Tucker], but sells used equipment as-is. -N8HFI]

SPECIALTY COMPONENTS:

JAN Crystals
2341 Crystal Drive
P.O. Box 06017
Fort Myers FL 33906-6017
+1-800-JAN-XTAL (Monday through Thursday)
+1-813-936-3750 (FAX)
+1-813-936-2397 (plant)
They make crystals. Minimum order is $10, which might be one crystal, or might be two.

Crystek Corporation
2351/2371 Crystal Drive
P.O. Box 06135
Fort Myers FL 33906-6135
+1-800-237-3061 (M-F) (US and Canada but not Alaska and Hawaii)
+1-813-936-2109
+1-813-939-4226 (FAX)
They make crystals too. They were the cheapest last time I ordered, but I don't have an up-to-date price list. It took about 4 weeks, and they had said it would take 6.

ICM (International Crystal Manufacturing Co., Inc.)
701 W. Sheridan
PO Box 26330
Oklahoma City OK 73126-0330

+1-800-426-9825
More crystals. They were more expensive, but they have lots of pre-made crystals for various rigs, so they would probably be faster.

Amidon Associates
2216 East Gladwick Street
Dominiguez Hills, CA 90220
+1-213-763-5770
+1-213-763-2250 (FAX)
Toroid cores and related things. Very fast service. Now takes MC/Visa and phone orders.

Palomar Engineers
Box 455
Escondido CA 92033
+1-619-747-3343
Toroid cores and shielding beads.

RF PARTS
435 South Pacific Street
San Marcos CA 92069
+1-800-RF-PARTS (Orders only)
+1-619-744-0700 (main order line & delivery info)
+1-619-744-0750 (customer service, warranty, tech & applications, 10AM-4PM)
+1-619-744-1943 (FAX)
Tubes and transistors. $2 handling below $20 for US orders; $5.50 minimum handling for Canada orders; they take foreign orders (but no handling info was given in the QST ad).

K2AW's Silicon Alley
175 Friends Lane
Westbury NY 11590
+1-516-334-7024
Free catalog, $10 minimum order. Semiconductors, in particular high-voltage diodes.

Small Parts, Inc. [New address and phone, 23 Dec 91]
13980 NW 58th Court
P.O. Box 4650
Miami Lakes, FL 33014-0650
+1-305-557-8222 Order department
+1-305-557-7955 Customer Service (ask for Mirta)
+1-305-558-1255 Catalog (ask for Elizabeth)
+1-305-557-8004 Custom-made Parts (ask for Ziggy)
+1-305-557-8005 Non-standard Sizes
of catalog parts (ask for Eric)
+1-800-423-9009 Toll free FAX line
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets, tools, wire-size drill bits (as in #61 size for PC board holes).

KITS:
(The terse "Note:" descriptions are from the ARRL Kit List courteously

supplied by Ed Hare and Mike Gruber at the ARRL. For a much more complete list of kit suppliers, use the ARRL email server; send the following as the text of a mail message:

help
index
quit

to the address info@arrl.org)

624 Kits
171 Springlake Drive
Spartanburg SC 29302
QRP kits (including some designs from W1FB's books) and some parts.

A&A Engineering
2521 W. LaPalma, Unit K
Anaheim CA 92801
+1-714-952-2114
Kits, some components, some books. S&H $4.50, catalog is free with SASE (2 oz postage).

Antique Electronic Supply
6221 S. Maple Ave.
Tempe, AZ 85283
+1-602-820-5411
Note: Broadcast receiver kits

Cirkit
Park Lane
Broxbourne, Herts EN10 7NQ, ENGLAND
+44-0992-448899 Sales
+44-0992-441306 Info
+44-0992-471314 Fax
Half-inch-thick catalog is UK£1.9. "Components - kits - test equipment."

C.M. Howes Communications
Eydon, Daventry,
Northants NN11 6PT
England
Phone: +44 327 60178
QRP, transmitters, receivers, misc. "The Heathkit of England", though with assembly manuals not as detailed, also without the intricate mechanicals of Heathkits.
[Carried by Townsend Electronics (at least) in the US]

Communications Concepts Inc.
508 Millstone Drive
Beaver Creek, OH 45434
+1-513-426-8600
+1-513-429-3811 (FAX)
kits for Motorola Applications Notes (amplifiers and the like), small assortment of components (chip capacitors, transistors). $4 Shipping&Handling.

Down East Microwave
Box 2310, RR#1
Troy, ME 04987
+1-207-948-3741
+1-207-948-5157 (FAX)
(Bill Olson, W3HQT) Microwave antennas and equipment, including kits for transverters and amplifiers. Free catalog available.

FAR Circuits
18N640 Field Court
Dundee IL 60118
Printed circuit boards for articles in the usual ham magazines. SASE for list. $1.50 shipping and handling per four boards.

Hamtronics, Inc.
65 Moul Road
Hilton, NY 14468-9535
+1-716-392-9430
Note: Amateur, general interest

Kanga Products # See also Kanga US below
Seaview House, Crete Road East
Folkestone CT18 7EG UNITED KINGDOM
Tel/Fax 0303-891106 9AM - 7PM, closed Mondays.
QRP Kits, components. SAE (6"x9") for catalog.

John Langner WB2OSZ
115 Stedman St.
Chelmsford, MA 01824-1823
+1-508-256 6907
Slow Scan Television for IBM PC.

Lake Electronics
7 Middleton Close
Nuthall
Nottingham NG16 1BX
England
Note: Amateur

Mercury Systems
15 Lakeside Dr.
Marlton, NJ 08053
+1-609-596-3304
Note: the ARRL Kit list didn't say what they carry; I don't (yet) know either.

Penntek Electronics
14 Peace Dr.
Lewistown, PA 17044
+1-717-248-2507
Note: The Neophyte Receiver, QST

Ramsey Electronics
793 Canning Parkway

Victor NY 14564
+1-716-924-4560
Amateur radio and hobby kits. The ham kits are all pretty simple and pretty inexpensive, and you get about what you pay for. Their new VHF transceiver kits (144, 220, 440) look pretty interesting. Many have complained about the quality of their kits, though.

Tejas RF Technology
P.O.Box 720331
Houston TX 77272-0331
+1-713-879-9300
+1-713-879-9494 (FAX)
Tejas Backpacker-II QRP kit and other things.

Townsend Electronics, Inc.
Box 415
133 N. 1st Street
Pierceton IN 46562
+1-800-944-3661 (US only)
+1-219-594-3661
+1-219-594-5580 (FAX)
C. M. Howes Communications kits. Radio mounts. RSGB and ARRL publications. $1 for catalog. $4 shipping & handling.

{See also RadioKit, Oak Hills Research}

LITTLE GUYS:

Oak Hills Research
20879 Madison St.
Big Rapids, MI 49307
+1-800-842-3748
+1-616-796-0920
+1-616-796-6633 (FAX)
Send $1 for a flyer. Some parts, QST article kits, transceiver kits, QRP stuff in general (they inherited the stock from Small Parts Center when they closed).

Dan's Small Parts And Kits (Formerly KA7QJY Components)
1935 S. 3rd W. #1
Missoula MT 59801
+1-406-543-2872
Send a business-size SASE (2 stamps) for a current list of parts. RF parts, including vernier drives and air variables; now also offers kits. $3.75 shipping, no minimum. Fast service, lots of satisfied customers.

Kanga US
Bill Kelsey
3521 Spring Lake Dr.
Findlay, OH 45840
+1-419-423-5643
call between 7 - 11 pm eastern time please. stamp for a catalog.

"I import kits from Kanga in the UK - most of them come from
SPRAT - the journal of the G-QRP Club. I also have the Super Tee Antenna
Tuner, and a range of kits from Elktronics that are based on the DDS
articles in 73 Magazine."

R&R Associates
3106 Glendon Avenue
Los Angeles, CA 90034
+1-213-474-1315 (res)
[Richard Rathburn, KB6NQ] "I mainly sell pc boards from QST, Radio
Electronics, etc., and a few of in-house design. I also sell IC's, etc."
Send a SASE every now and then for his most recent flyer. He also has boards
for some Motorola Application Notes. (Jan 94 -- a member of the QRP mailing
list reports some dissatisfaction with R&R.)

CW Technology
7328 Timbercreek Court
Reynoldsburg, OH 43068-1181
COD Orders at 800-547-7479
"I have a small (just me) mail order company through which I sell kits.
My starter products were kits for computer<->transceiver interfaces to go
along with my 2/93 QST article. Since, I have added a programmer kit for
the MC68HC705K1 microcontroller and an optoisolated stepper motor controller
kit. I also sell the PCBs and difficult parts for these projects."
- Wally Blackburn AA8DX

GNP Sales
POB 77011
San Francisco, CA 94107.
"Business size SASE for our current list.
We are very small, all three of us have "real" jobs. We buy and sell
vacuum caps, vacuum relays, various high voltage parts, coax relays,
mostly radio stuff." - Peter Gerba, pgerba@crl.com

MANUALS:
Eico Electronic Instruments Co., Inc.
363 Merrick Rd
Lynbrook NY 11563
Note: No current kits, EICO manuals and schematics only

PUBLICATIONS:

NUTS & VOLTS MAGAZINE
430 Princeland Court
Corona CA 91719-9938
+1-800-783-4624 (subscriptions)
+1-714-371-3052 (subscribe by FAX)
All advertisements magazine (though they're now publishing small projects).
Issues are $2.00 (at least, that's the price on the cover), subscriptions
are (third class mail, USA:) $17/1 year, $31/2 years, (first class mail
USA) $34/1 year, (Canada/Mexico) US$35, (other foreign, air mail) US$70,
(other foreign, surface) US$39. A subscription also entitles you to one

free classified ad of 40 words.

Ham Trader Yellow Sheets
PO Box 15142
Seattle WA 98115
"SUBSCRIPTIONS: U.S.: 24 Issues(1 yr) $16.50 50 Issues(2 yrs + 2 issues) $32. 75(3 Yrs + 3) $48. CANADA & MEXICO: 24/$20. 50/$39. 75/$58. FOREIGN: $38 a year sent Airmail. Published 2 ISSUES A MONTH sent 1st Class Mail... NO LONG WAIT FOR AD CIRCULATE! NOTE: A $4/4 issue MINI-SUBSCRIPTION may be ordered by potential subscribers, or WITH AN AD to qualify for the Special Subscriber Ad Rates given below:" Non-subscriber ads $1/{word,number,group} per insertion; subscribers: businesses or other for-profit sales $0.75 per word; ads involving items solely from or for your own use $0.35 a word; hamfest ads $0.35. Ads and ads with subscriptions should be sent to POB 10253 Sarasota FL 34278 during the winter; spring through fall they go to POBox 2057, Glen Ellyn IL 60138.

Howard W. Sams & Company
P.O. Box 7092
Indianapolis, IN 26207-7092
+1-800-428-SAMS
Publishers of SAMS PHOTOFACTS and many other electronics books. There is an Annual Index of SAMS PHOTOFACTS whose cost I have forgotten. In-print Photofacts run between $14.95 to $39.95 (for computer Photofacts); they will photocopy out-of-print Photofacts for $11.95 + $2.50S&H for one page, plus $.55 per page thereafter.

RF Design Magazine
P O Box 1077
Skokie IL 60076-9931
+1-312-762-2193
A magazine for professional RF designers. Subscriptions are $38 per year in the US, $48 in Mexico and Canada, $51 elsewhere, unless you appear to be a "qualified subscriber" (i.e. are in serious danger of convincing your company to buy a $12,000 spectum analyzer based on an ad) in which case it's free. Heavy on theory, and even the advertisement articles are educational.

Electronics Now (formerly Radio Electronics)
Subscription Service
P.O. Box 51866
Boulder CO 80321-1866
+1-800-999-7139
A magazine for thumb-fingered electronics hobbyists. Subscription rate on the bingo card in the November issue (the latest I was able to dig up) was $19.97 per year.

Popular Electronics
Subscription Department
P.O.Box 338
Mt. Morris, IL 61054-9935
+1-800-827-0383
Like Electronics Now. $18.95 according to the latest bingo card I see.

The Computer Applications Journal (Circuit Cellar INK)
P. O. Box 3050
Southeastern, PA 19398-9932
+1-203-872-2204 (FAX)
This magazine is what Steve Ciarcia wanted BYTE to be when it grew up. It focuses on microcontroller applications and other digital projects. $21.95 per year (12 issues, now) (Canada, Mexico: add $10 surface mail, $20 air mail; other countries: add $28.)

The Radio Craftsman
P.O. Box 3682
Lawrence, KS 66046-0682
Bi-monthly newsletter for homebrewers of amateur radio gear. Information about electronics construction techniques, components, book reviews, beginning electronics theory, and the occasional construction project. Oriented toward the beginner/intermediate level. Price, $10/year (six issues), $15 outside the U.S. Published by Doug Heacock, AA0MS. Send large SASE for free sample issue. [Info supplied by Doug Heacock.]

QRP CLUB PUBLICATIONS

G-QRP Club Memberships to:
Rev. George Dobbs, G3RJV (make cheques payable to "G QRP CLUB"):
St. Aidans Vicarage John Leak, G0BXO
498 2 Manchester Rd. Flat 7, 56 Heath Crescent
Rochdale, Lancs, OL11 3HE, ENGLAND Halifax HX1 2PW, ENGLAND
Tel 0422 365025
Publication is SPRAT, a quarterly.
Subscriptions/membership is UK#5.00 per year in the UK, US$12 (cash) or US$14 (check) for foreign members (cheaper direct payment options are available in the US, Germany, The Netherlands, and Austria). (US payments of $12 can be sent to Mike Kilgore KG5F, 2046 Ash Hill Road, Carrollton TX 75007; make checks payable to G QRP Club, and include your callsign and membership number (if any)).

QRP Amateur Radio Club, International (QRP-ARCI)
Info packets ($2) Subscriptions to (payable to QRP ARCI):
Mike Bryce, WB8VGE Mike Kilgore, KB5F
2225 Mayflower NW 2046 Ash Hill Road
Massilon, OH 44647 Carrolton TX 75007
Publication is the QRP Quarterly.
Subscription is $12 ($14 non-US, UK#7) for new members, $10 ($12/#6) for renewals.

QRP Club of New England
Name: QRP Club of New England
Date Founded: 1991
Number of Members: 206
Cost to Join: $10
Annual Dues: $7
Publication Name and Frequency: 72 - quarterly
Net(s): QRP-NE SSB Net, 0200Z Tuesdays 3.855MHz

Mailing Address:
Jack Frake, NG1G
P.O. Box 1153
Barnard, VT 05031

Name: Michigan QRP Club
Date Founded: 1978
Number of Members: 1,200
Cost to Join: $7 US, $12 DX
Annual Dues: $5 US, $10 DX
Publication Name and Frequency: The Five Watter - quarterly (a.k.a. T5W)
Net(s): MI-QRP Net, 0200Z Wednesdays 3.535MHz
Mailing Address:
Michigan QRP Club
654 Georgia
Marysville, MI 48040

Name: NorCal (Northern California) QRP Club
Date Founded: 1993
Number of Members: 200
Cost to Join: $5
Annual Dues: $5
Publication Name and Frequency: QRPp - quarterly
Net(s): None
Mailing Address:
Jim Cates, WA6GER
3241 Eastwood Road
Sacramento, CA 95821
This is the club that was selling the incredibly popular "NorCal 40" kit to members, and currently is about to sell the almost-certain-to-be popular Sierra kit.

North Texas QRP Club
(Subscription to)
Twilight Publishing Company
1301 West Highway 407, Suite 353
Lewisville TX 75067
Publication is the K5FO Newsletter (possibly changing name eventually). Filling in the gaps left by the publication schedules of QRPp and QRP Quarterly, Chuck Adams (K5FO) will be publishing a newsletter for low-power amateur radio enthusiasts in Feb, May, August, and November (thus ensuring that QRP enthusiasts must break away from their bench and visit the mailbox at least every 30 days, guaranteed :-). This also gets you membership in the North Texas QRP Club.
"In order to get your copies of the newsletter and to get your number, do the following:
1. Send letter with your name, call(if any), address, email address if you are on the super highway of information, and any other info you want in a membership book to
Twilight Publishing Company
1301 West Highway 407, Suite 353

Lewisville, TX 75067
2. Enclose on photograph of A. Lincoln ($5 bill) produced by the US Govt.
and a postcard with your name and address to acknowledge
receipt of same. I tend to hold on to checks too long. MO is
you don't trust the USPS. :-)"
May '94 will be the first issue, and there won't be any reprints, so get
in on the ground floor! (I will! -jfw)

NOTES:

This file, and many others, are available for anonymous ftp from
ftp.cs.buffalo.edu, in /pub/ham-radio (this article is "mail_order"
in that directory).

CHANGES FOR $Revision: 2.17 $

Add Kanga US, Kanga UK, RF Parts, Cirkit, Birkitt, Bardwell.
BCD Electro out of the mail order business.
Add CW Technology, GNP Sales.
Fix FTP listings (toxicwaste.mit.edu is no longer archiving sci.electronics,
give actual directory name for ftp.cs.buffalo.edu).
Add my name, since this seems to get shared around a lot.
Add QRP clubs as separate category.
Jameco is no longer apparently headed out of the components business, stop
complaining about them (for now :-).
Santa Clara Active Electronics is closed?
JDR moved, changed phone numbers.

1710. CW Timings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 13:42:22 UTC
From: fax@sparc4.Ico.Olivetti.COM
Message-ID: <9407111342.AA06027@sparc4.ICO.OLIVETTI.COM>
Source record: 117249

Thanks to all who responded to my posting...

73, Marco

--
Marco Fassiotto, i1iiy/aa1iu
Internet : fax@sparc4.ico.olivetti.com
AX25 : aa1iu@n0ary.#nocal.ca.usa.na

1711. Re: type-C RF connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 13:52:13 UTC
From: rel@glenqcy.glenayre.com
Message-ID: <rel.16.0007DF0B@glenqcy.glenayre.com>
Source record: 117214

In article <steve-080794121655@brainiac.hi.com> steve@hi.com (Steve Byan) writes:

>I've just purchased a CU-1388/FLR-9 receiver multicoupler from Fair Radio.
>Fair's catalog says it has "type-C" RF connectors. I can't seem to find a
>reference to type C connectors anywere, much less a place to procure some.
>They look like overgrown BNC's. Anyone know what they are, and where I can
>buy some? (Maybe they're MHV's?)

Type C connectors are indeed overgrown BNCs or more like Ns with the BNC
locking feature.

They are not real common but several places have them;

Pasternack Enterprises
Coaxial Products division
POBox 16759
Irvine Ca 92713
714-261-1920

Also try several of the coax connector vendors in CQ or QST.

I have used them for several years for patch panels at the plus kilowatt level
and they work good for this type of application.

>Steve Byan internet: steve@hi.com
>Hitachi Computer Products (America), Inc.
>1601 Trapelo Road phone: (617) 890-0444
>Waltham, MA 02154 FAX: (617) 890-4998

1712. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 14:08:48 UTC
From: mack@ncifcrf.gov
Message-ID: <Css4Mo.Lx@ncifcrf.gov>
Source record: 117250

In article <9407110930.aa16788@argos.ee.surrey.ac.uk> M.Willis@ee.SUrrey.ac.UK writes:
>You want the VHF Handbook, but beware, it is going to be replaced very
>soon with a new edition. The DX book is also very good but not for the USA
>as we have different bands and power limits in Europe. A lot still applies
>but a lot does not.
>
>73 Mike

You can't get the VHF/UHF DX book in the US at the moment. The ARRL has
been back ordered for months and non of the other suppliers have it.
I thought it was very good and was trying to get another copy for a friend.
Does anyone know a source in the US for this book (or how much is
it via the RSGB and how do I get it from the US?)

Joe Mack
mack@ncifcrf.gov

1713. QST DDS article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 14:26:14 UTC
From: wiseman@ATVL.Research.Panasonic.COM
Message-ID: <1994Jul11.142614.27516@MITL.Research.Panasonic.COM>
Source record: 117259

There was a thread a few weeks ago about a recent QST (June ?) article on using a DDS with a limiter/PLL on the output. Is there someone out there who could fax me a copy? Please respond via e-mail, and I will provide a fax number...

John
KA5WTO

1714. RF & IF tank alignment hints

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 14:27:17 UTC
From: ed@fore.com
Message-ID: <Css5HH.FCD@fore.com>
Source record: 117262

I am preparing to align an older hf rig, Tempo One,
and wonder if there are any good tips on aligning the rx & tx circuits.

I have a pseudo RF generator, "a modified dip meter oscillator" in an old
heathkit RF generator box. Its not accurate freq wise, I dont want to
screw up and Peak the IF off center. I thought of just using the antenna input
and peaking from the bottom up.

Comments?
Tips?
Ideas?
Things not to do?

Ed N3SDO
Ed@fore.com

1715. RDF kit order lost

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 16:22:51 UTC
From: wa2sff@arch4.ho.att.com
Message-ID: <CssAu6.ADI@nntpa.cb.att.com>
Source record: 117254
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

At the Dayton Hamfest there was a fellow selling RDF kits
based on the May 93 article in QST on the "Handi-Finder."

I bought a kit and it works fine.

I then followed up with an order for 25 kits for our
local ham radio club and RACES group.

Well 6 weeks later and one followup note later, still no kits.

The name of the fellow is "Stephan A. Douglas"

His mailing address is a PO box (same as on the order sheet)
and he has an unlisted number.

Has any one ordered any kits from him and received them?

The only money we are out is the cost of a money order
since the kits are to come COD, but if I knew he
wasn't going to deliver I would do something different.

My next step is to complain to the Post office.

I am also trying to buy the PC boards and make my own
kits for the club.

FAR Circuits sells boards and I have had good luck with them
in the past.

Joe Wilkes

1716. SUMMARY DSP algorithms

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 16:27:42 UTC
From: steve@hi.com
Message-ID: <steve-110794122128@brainiac.hi.com>
Source record: 117252
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Here's what I've heard so far regarding the denoising algorithms in the popular digital audio filters. None of this is confirmed, so take it with a grain of salt.

The Timewave unit uses the LMS/short-time correlation algorithm, but with a 16-bit converter.

The JPS NIR-10 uses an FFT/threshold/inverse-FFT algorithm, where FFT frequency bins that are below a threshold are set to zero. Some say that this produces more audible artifacts than the LMS/short-time correlation algorithm. I can't say for sure; I've only heard the NIR-10 and no others, but it seems like a reasonable claim.

The JPS units that advertise "pink noise reduction" appear to use the LMS/short-time correlation algorithm, like W9GR's.

Regards,
-Steve

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1717. International Instruments/Sigma instruments

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 16:31:02 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <2vrs46$fh1@dawn.mmm.com>
Source record: 117253
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Let me see if I can explain this:
I am looking for a triple purpose panel meter made by International instruments a division of sigma instruments inc. The meter shows tuning on the left side battery strength in the middle and output on the right. It is about 3 1/2" X 2 1/2". The box says Range 001 MA Model 1122HL. The company used to be at 88 Marsh Hill Road, Orange, Conn.
Thanks for any info.
--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

1718. Single 813 amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 16:35:34 UTC
From: pulley@rouge.phys.lsu.edu
Message-ID: <2vrscm$2sai@te6000.otc.lsu.edu>
Source record: 117255

Hello,
I recently came across a large part if not complete linear
amplifier which uses one 813 tube. I was hoping someone knew of
some old magazine article(maybe QST or something) which
describes such a beast. I can probably figure out what is and
is not missing, but I was hoping to make my life easier by
looking at an at least similar circuit diagram. Any help will
be appreciated.
reply to
pulley@rouge.phys.lsu.edu
or to this group.
Thanks,

1719. FSK VCXO Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 17:13:03 UTC
From: mark@alf.cooper.edu
Message-ID: <1994Jul11.171303.369@alf.cooper.edu>
Source record: 117264

Hello all,

Could someone steer me in the direction of where I can find a voltage controlled oscillator circuit that would be suitable for, say, a 16 step FSK input? My desire is to transmit 4 bit bauds via FSK, hopefully over only 1-2KHz bandwidth in the 27MHz region. Thanks!

BTW, does the ARRL have a WWW server?

Mark

; Mark Balch The Future is MPP!
; The Cooper Union mark@alf.cooper.edu [slow but reliable]
; (212) 353-4350 mark@magnum.cooper.edu [fast but chancy]

1720. Poor Man's Packet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 17:41:35 UTC
From: eamurashie@mail.beckman.com
Message-ID: <eamurashie.38@mail.beckman.com>
Source record: 117256

I can't find any local libraries that have the back issue of
73 Amateur Radio Magazine for Aug 1991. That issue has the
schematic for the poor man's packet interface. Does anyone
have a postscript file, pcx file, ascii art file of the
schematic?

Unfortunately I read a nice posting from someone who had just
received Dove for the first time. Unfortunate, because I spent
all weekend tuning in listening to Dove for the first time. That
got me hooked on learning about packet radio, which used up my
entire weekend. Boy, did my girlfriend get mad!

Thanks,
Ed Murashie KE6FJU

Ed Murashie US Mail : Beckman Instruments Inc.
phone: (714) 993-8895 Diagnostic System Group
fax: (714) 961-3759 200 S. Kraemer Blvd W-361
Internet: eamurashie@ccgate.dp.beckman.com Brea, Ca 92621

1721. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 18:12:12 UTC
From: mzenier@netcom.com
Message-ID: <mzenierCssFwE.J0M@netcom.com>
Source record: 117257
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

jdow on BIX (jdow@BIX.com) wrote:
: steve@hi.com (Steve Byan) writes:
: >Are the spice transistor models good enough to predict intermodulation
: >distortion?

: Re spice models vis a vis IMD: I dunno - I built my own small signal circuit
: analysis proggy long ago and did large signal analysis almost purely from
: "first principles" and data sheets.

Dr. Ulrich Rohde has had several article in QEX on modeling receiver
front ends and other RF circuits.

"Differences between Tube-Based and Solid State Based Receiver Systems
and Their Evaluation Using CAD" QEX, ARRL Experimenters Exchange,
April 1993.

This is a summary of a presentation "Overview of State of the Art of
Modeling the Dynamic Range of VHF, Microwave and Millimeter Receiver
Systems using Computer Aided Design" VHF Conference, Sept 19-20 1992,
Weinheim, Germany.

It's all above me, but it looks like he can get noise figure and
dynamic range out of a software package called Microwave Harmonica.

Mark Zenier mzenier@netcom.com mzenier@eskimo.com

1722. Wanted: Popular Electronics article from May 94 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 18:44:29 UTC
From: folson@prairienet.org
Message-ID: <2vs3ud$6uk@vixen.cso.uiuc.edu>
Source record: 117258

I am looking for a an article in the May issue of 1994 about

an NBS crystal radio article. If anyone could send me a copy of

the article I'd appreciate it. I will refund your stamp!! Thanks

Fran (WB9ULS). I am unable to get it from the local library or

book stores.

--
Fran Olson (WB9ULS) email:folson@prairienet.org
P.O. Box 1122
Champaign, IL. 61824-1122
U.S.A.

1723. Air system sockets better?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 18:57:07 UTC
From: Waltk@pica.army.mil
Message-ID: <9407111457.aa16136@COR5.PICA.ARMY.MIL>
Source record: 117263

Anyone out there have any experience with air system sockets for the
3-500 or 4-400 line of tubes?

I am considering replacing the ceramic sockets in my homebrew amp,
with air system type sockets. The reason being that I find the noise
generated by the air passing thru the pressurized chassis, thru those
tiny holes in the cermic sockets, and out thru the tube base to be
too loud. I've mounted a squirrel cage blower in the adjoing room
and pipe the air in via large 4" hose. The blower is rated at
95 cfm @ 0" / 70 cfm @ 2" H2O. I have a variac on the blower and have
two settings, one for casual use and another for full-tilt contesting.
But, even at the lower voltage setting I find the noise objectionable.
I think the air system type of socket would present less resistance to
the air yielding lower back pressure. Hence, I could move more air with
less pressure. BUT, I don't know this for certain, and was hoping someone
reading this forum could give me another oppinion before I perform surgery
on the amp.

Thanx & 73 de Walt - K2WK waltk@pica.army.mil

1724. Re: Old Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 19:50:52 UTC
From: edw@sequent.com
Message-ID: <1994Jul11.195052.8688@sequent.com>
Source record: 117261
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Newark Electronics SF and other cities
Arlington RElectronic Wholesaler Arlington VA
Probably radio shack

In article <2vha47$cf5@dawn.mmm.com>,
Tahir Kayani <tahir@tcdsp1.mmm.com> wrote:
>I am looking for the following parts:
>
>Lamp GE1819
>transistor 2N5490
>Voltage Regulator (12v) 7812 (NC7812C or NC7812K)
>
>Please email directly. Thanks for any help.
>--
>**
>* The opinions expressed are mine and do not reflect the views of*
>* Twinix Systems Inc. or 3M. *
>**

--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

1725. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 19:52:02 UTC
From: steve@hi.com
Message-ID: <steve-110794154454@brainiac.hi.com>
Source record: 117260
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

> Dr. Ulrich Rohde has had several article in QEX on modeling receiver
> front ends and other RF circuits.
>
[...]
>
> It's all above me, but it looks like he can get noise figure and
> dynamic range out of a software package called Microwave Harmonica.

I dunno about Microwave Harmonica, but it seems to me that a good part of Rohde's articles deal with calculating the system 3rd-order intercept given the 3rd-order intercept of the pieces. This is well and good, but it leaves me wondering how to predict the 3rd-order intercept of the pieces. I suppose one measures it in the lab. (Lab? What's that? :-) Since I'm lab-equipment-poor, I'm interested in good models that predict 3rd-order intercept reasonably well.

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1726. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 22:01:03 UTC
From: faunt@netcom13.netcom.com
Message-ID: <FAUNT.94Jul11150104@netcom13.netcom.com>
Source record: 117265

I have the June RadCom in front of me, and it lists the VHF/UHF DX Book at #18.00 for non-members of the RSGB. They ask for #1.75 for overseas surface mail. Voice phone is 707-659015 and fax number is 707-645105 (prefix by 011 44 from the US). The easiest way to pay is by Visa or Mastercard. The mailing address is RSGB Sales (CWO), Lambda House, Cranbourne Road, Potters Bar, Herts EN6 3JE.
73, doug

1727. SELL/Filter Capacitor for BIG Linear applications

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 23:08:38 UTC
From: raym@omnifest.uwm.edu
Message-ID: <2vsjdm$ifb@omnifest.uwm.edu>
Source record: 117173

Hi,
I have a Cornell Dubilier Mod. LPC 102-1 Filter Capacitor rated at:
8KVDC @ 16MFD. It is in new unused condition. Physical dimensions are:
12" high (including terminals) X 8" wide X 6" deep.
Price: $50.00 plus shipping (weight approx 30#
Contact: raym@omnifest.uwm.edu
###

1728. 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 23:37:37 UTC
From: tallath@hookup.net
Message-ID: <tallath.3.0017A12F@hookup.net>
Source record: 117169

I was wondering if any of you fine gentleman could answer a simple question for me. I'm searching for what has been coined as a 'piston trimmer' capacitor. From what I know it is a variable capacitor but when I ask for it at Wackid's, Radio Shack, and electronics stores they either don't know what I'm asking for or have a vague idea what I'm talking about but can't seem to convey a good description of it to me.

This problem is compounded by the fact that I don't know what it looks like and don't know where I should look for one. I've checked the FAQ with no success. Could someone explain what it is, what it would probably look like, and since no one here - where I am, not in this newsgroup - knows what I'm asking for, could someone give an order number or suggest a good place to mail-order from that might have some.

Thanks

1729. PMP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-11 23:45:37 UTC
From: steves@vcd.hp.com
Message-ID: <CssvC1.798@vcd.hp.com>
Source record: 117267

I think I still have that info somewhere. I built
the modem/interface and it seemed to work pretty
well -- except the Ramsey 2M I think has some problems.
If I can find the stuff I'll copy it and send it to
you if you'll email your address.

Steve Schoeneman
KA7HHB

1730. Help-Remote Control circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 01:00:55 UTC
From: optronic@gate.net
Message-ID: <2vsq07$kse@tequesta.gate.net>
Source record: 117266

I am Newbie2be Tech amateur looking for any info on small RF remote control circuits for hand held use, like for activating / deactivating mobile alarms and such. Would this fall under the 50 Mhz. "model craft" section? I am interested in building / learning about RF control, please point me and I shall run in that direction. Thanks,

Bob Bronson optronic@gate.net

1731. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 01:52:02 UTC
From: petewjy@aol.com
Message-ID: <2vst02$bdl@search01.news.aol.com>
Source record: 117168

In article <1994Jun12.122846.1@ccsua.ctstateu.edu>,
white@ccsua.ctstateu.edu writes:

You go that right I ran into the same problems with their QRP 17. Never
again
though. I still cant get the thing to work right. I only get about 1 to
1.5 watts
output on mine.
Pete

1732. Re: Beware of RADIOKIT kits (IMHO)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 05:32:13 UTC
From: white@csusys.ctstateu.edu
Message-ID: <1994Jul12.003213.1@csusys.ctstateu.edu>
Source record: 117170

I still agree. Radiokit needs to get their act together. The QRP-20 kit has taken its rightful place in my ham career: as my first failure. Every solder joint checked, schematic traced, coils verified and turns recounted, etc. etc. They should *at least* tell you that the kit is for advanced builders or EEs :)
It was also missing 7 parts though they did mail the parts promptly.The manual is a joke, and would be just as worthless to the builder of the QRP-15, which is the manual supplied with the QRP-20.
C'est la vie. We learn.
73 de N1QVE
Harry

1733. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 06:36:45 UTC
From: jdow@BIX.com
Message-ID: <jdow.773995005@BIX.com>
Source record: 117171
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

steve@hi.com (Steve Byan) writes:

>> Dr. Ulrich Rohde has had several article in QEX on modeling receiver
>> front ends and other RF circuits.
>>
>[...]
>>
>> It's all above me, but it looks like he can get noise figure and
>> dynamic range out of a software package called Microwave Harmonica.

>I dunno about Microwave Harmonica, but it seems to me that a good part of
>Rohde's articles deal with calculating the system 3rd-order intercept given
>the 3rd-order intercept of the pieces. This is well and good, but it leaves
>me wondering how to predict the 3rd-order intercept of the pieces. I
>suppose one measures it in the lab. (Lab? What's that? :-) Since I'm
>lab-equipment-poor, I'm interested in good models that predict 3rd-order
>intercept reasonably well.

>Steve Byan internet: steve@hi.com
>Hitachi Computer Products (America), Inc.
>1601 Trapelo Road phone: (617) 890-0444
>Waltham, MA 02154 FAX: (617) 890-4998

If you can get one point on the IMD curve you can calculate the intercept point. So if your modeling SW provides "two interfering signals of -27dBm each produce an IMD product of -107dBm" or even "100dB dynamic range relative to sensitivity of -117dBm" etc you can work backwards to the intercept point.

Taking the first cited data, -107dBm birdy for two -27dBm signals, we can work backwards. For every 1dB we increase the signal levels the birdy goes up three or the difference drops by 2db. Since the difference is 80dB as cited we have to reduce the difference by 80dB to get signal equal to spur, in the method used with military projects when I was doing them. Hence we must change the individual signals by half the 80dB. -27dBm + 40dB gives an intercept point of +13dBm. (Which ain't all that bad.)
{^_^} jdow@bix.com

1734. Re: RDF kit order lost

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 08:39:15 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul12.003915.1@vax.sonoma.edu>
Source record: 117172
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

In article <CssAu6.ADI@nntpa.cb.att.com>, wa2sff@arch4.ho.att.com () writes:
> At the Dayton Hamfest there was a fellow selling RDF kits
> based on the May 93 article in QST on the "Handi-Finder."
>
> I bought a kit and it works fine.
>
> I then followed up with an order for 25 kits for our
> local ham radio club and RACES group.

Just what type of RDF kits were these? I never saw the article...

73,
Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1735. Re: RDF kit order lost

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 12:33:44 UTC
From: wa2sff@arch4.ho.att.com
Message-ID: <Cstuw8.LCG@nntpa.cb.att.com>
Source record: 117174
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

The article is
"Build the HANDI-Finder!"
May 1993 QST, page 35
author: Bob Leskovec, K8DTS

Joe Wilkes

1736. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 13:53:30 UTC
From: rel@glenqcy.glenayre.com
Message-ID: <rel.18.0007E48B@glenqcy.glenayre.com>
Source record: 117215

In article <tallath.3.0017A12F@hookup.net> tallath@hookup.net (Gordon R Beatty) writes:

> I was wondering if any of you fine gentleman could answer a simple
>question for me. I'm searching for what has been coined as a 'piston trimmer'
>capacitor. From what I know it is a variable capacitor but when I ask for it
>at Wackid's, Radio Shack, and electronics stores they either don't know what
>I'm asking for or have a vague idea what I'm talking about but can't seem to
>convey a good description of it to me.

> This problem is compounded by the fact that I don't know what it looks
>like and don't know where I should look for one. I've checked the FAQ with no
>success. Could someone explain what it is, what it would probably look like,
>and since no one here - where I am, not in this newsgroup - knows what I'm
>asking for, could someone give an order number or suggest a good place to
>mail-order from that might have some.

> Thanks

The piston capacitor is pretty much self descriptive. The capacitor is formed by a sliding piston insulated from an enclosed cylinder. The piston moves in or out of the cylinder depending on the amount of capacitance desired or required for tuning the circuit.

They do come in lots of values and sizes. Murata-Erie, Johanson, E.F. Johnson, and others make the parts.. The parts can be purchased from many of the vendors of RF parts (diffinently not Radio Shack) who are listed in all the Ham magizines as well as Radio-Electronics and others.

Good Luck with your project

Ron, K0RL

1737. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 14:23:03 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.774022983@aries>
Source record: 117175

tallath@hookup.net (Gordon R Beatty) writes:

> I was wondering if any of you fine gentleman could answer a simple
>question for me. I'm searching for what has been coined as a 'piston trimmer'
>capacitor. From what I know it is a variable capacitor but when I ask for it
>at Wackid's, Radio Shack, and electronics stores they either don't know what
>I'm asking for or have a vague idea what I'm talking about but can't seem to
>convey a good description of it to me.

> This problem is compounded by the fact that I don't know what it looks
>like and don't know where I should look for one. I've checked the FAQ with no
>success. Could someone explain what it is, what it would probably look like,
>and since no one here - where I am, not in this newsgroup - knows what I'm
>asking for, could someone give an order number or suggest a good place to
>mail-order from that might have some.

It's round, made out of glass or ceramic, and the capacity is between the
metal on the outside of the round tubular glass and the round tubular metal
cylinder that moves to and fro inside the glass tube. The glass or ceramic
is the dielectric. The end of the glass tube has a cap made out of metal
with a threaded hole in it, and the movable cylinder has a threaded rod
attached to it. Turning the threaded rod gives a precise movement of the
cylinder within the tube. Try Digi-Key 1-800-344-4539 (only one kind offered)
or Newark (many branches around the country but $25 minimum) 1-312-784-5100

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

> Thanks

1738. LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 14:26:33 UTC
From: S965544@UMSLVMA.UMSL.EDU
Message-ID: <16FF184C9.S965544@UMSLVMA.UMSL.EDU>
Source record: 117203

I'm considering experimenting with FM modulation on the LF Band (160-190 Kh), and would be interseted in hearing from anyone who has any experience (or has similar interest) in this area. RESPOND: S965544@UMSLVMA.UMSL.EDU (BILL)

1739. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 14:50:45 UTC
From: a-rickf@ac.Tandem.com
Message-ID: <Csu18L.I72@ac.tandem.com>
Source record: 117176

In article 0017A12F@hookup.net, tallath@hookup.net (Gordon R Beatty) writes:
> ... I'm searching for what has been coined as a 'piston trimmer'
> capacitor. From what I know it is a variable capacitor. ....

-Correct

> ... This problem is compounded by the fact that I don't know what it looks
> like and don't know where I should look for one. ...

A piston trimmer capacitor physically looks like an insulative tube with an electrode on the outside (plated or foil wrapped) and an adjustable element that looks like a slug that slides in and out of the tube. The amount of capacitance, as you might guess, varies relative to the amount of the two conductive parts that are adjacent to one another (overlap?). Works just like any other variable cap, but normally uses the tube as dielectric instead of air (standard rotary variable) or air and mylar insulator (compression trimmer)

They used to be available from Allied, etc (years ago), and at all the surplus places. I haven't seen one in years, but that doesn't mean theyre not still available, just that I've not been looking for any. Typical size of the ones I've played with was around 1/4" in diameter and 1" long or less. I'd imagine you could use any trimmer _with_sufficient_voltage_rating_ and capacitance as a substitute.

--good hunting---

--Rick KD6QZD a-rickf@ac.tandem.com

1740. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 15:58:10 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <Csu4Cz.JJy@hpqmoea.sqf.hp.com>
Source record: 117177

Why do you specifically want a piston style trimmer capacitor?

What value do you want?

What do you intend to do with it?

I know of very low value tiny ones for UHF/low microwave use, and
giant jobs in the RF decks of old AR88's. If you want one to fit in
some existing equipment, or published design, you have to sort out
electrical value range and mechanical dimensions.

Cheers
David GM4ZNX

1741. Re: Frequency conversion - non-linear mode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 16:51:51 UTC
From: ep588deb@pts.mot.com
Message-ID: <Csu6uG.ErA@pts.mot.com>
Source record: 117182
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article 110794154454@brainiac.hi.com, steve@hi.com (Steve Byan) writes:
>> Dr. Ulrich Rohde has had several article in QEX on modeling receiver
>> front ends and other RF circuits.
>>
>[...]
>>
>> It's all above me, but it looks like he can get noise figure and
>> dynamic range out of a software package called Microwave Harmonica.
>
>I dunno about Microwave Harmonica, but it seems to me that a good part of
>Rohde's articles deal with calculating the system 3rd-order intercept given
>the 3rd-order intercept of the pieces. This is well and good, but it leaves
>me wondering how to predict the 3rd-order intercept of the pieces. I
>suppose one measures it in the lab. (Lab? What's that? :-) Since I'm
>lab-equipment-poor, I'm interested in good models that predict 3rd-order
>intercept reasonably well.
>
>Steve Byan internet: steve@hi.com
>Hitachi Computer Products (America), Inc.
>1601 Trapelo Road phone: (617) 890-0444
>Waltham, MA 02154 FAX: (617) 890-4998

If you'd like to spend a bunch of cash on a recent non-linear simulator, MDS
has been working well for me. Microwave Harmonica will also work. The problem with
simulating IP3 is that you ned models that represent the reality of the device
fairly closely. What I have been doing is to do modeling and banchwork in parallel,
so that I can confirm both sets of results independently.
As far as measuring IP3, all you need is 2 signal generators and a spectrum analyzer.
(Motorola paid for mine !) . A lot depends on the frequency band you are working in.

David Bengtson 407-364-3806
Motorola No, I'm not speaking for Motorola
Mail Stop 98 If I was, I'd be making more money!
1500 NW 22nd Ave
Boynton Beach, FL 33626

1742. HELP with air variable cap connections

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 21:45:19 UTC
From: white@csusys.ctstateu.edu
Message-ID: <1994Jul12.164519.1@csusys.ctstateu.edu>
Source record: 117178

I have a Millen ##20075 85pf air variable, that will serve as the
tuning cap for the W7EL &MHz Optimized rig. There is only 1 lug
on the cap.....and I am assuming that the connection to ground can be
made to either of 2 posts that support the fixed (non-rotating) blades of
the cap? Help?
73 es much gratitude de N1QVE
Harry
white@csusys.ctstateu.edu

1743. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-12 23:23:17 UTC
From: clifto@indep1.chi.il.us
Message-ID: <Csuoyu.BF@indep1.chi.il.us>
Source record: 117183

In article <tallath.3.0017A12F@hookup.net> tallath@hookup.net (Gordon R Beatty) writes:
> I was wondering if any of you fine gentleman could answer a simple
>question for me. I'm searching for what has been coined as a 'piston trimmer'

They're like a little white tube with a lead off each end and a screw going
into one end. Some are maybe 3/4" long by 1/8" diameter. Also called
multiturn trimmers. If you have the July-Aug 1994 DigiKey catalog, look
at the bottom of page 205 for pictures.

--
Optimists say, "The glass is half full."
Cliff Sharp Pessimists say, "It's half empty."
WA9PDM We realists say, "Before I decide,
clifto@indep1.chi.il.us tell me what's in the glass."

1744. Pin Diode T/R circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 00:21:49 UTC
From: beau@enterprise.america.com
Message-ID: <2vvc2t$6ta@enterprise.america.com>
Source record: 117179

I am looking for a t/r circuit for my vhf and uhf power amps

and pre amps. I want to accomplish this with pin diodes. How
about the source for a schematic or mabe a scanned copy of one?

```
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

1745. DISTRIBUTED CAPACITANCE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 01:04:33 UTC
From: T230579@UNIVSCVM.CSD.SCAROLINA.EDU
Message-ID: <16FF112862S85.T230579@UNIVSCVM.CSD.SCAROLINA.EDU>
Source record: 117181

Someone MUST know the answer to this question:
How does one CALCULATE the distributed capacitance of a long,
single-layer solenoid? I cannot find this calculation anywhere. I have
posted on science groups, even MENSA, and no one can help me. I know how to g
get it from a existing coil, but I want to be able to design them for a
specific value and not have to do it all empirically. I someone has the a
answer, could you mail me what it is? This is all that is stopping me from
finishing a book. You will be mentioned if the thing is ever published...
My e-mail address is: t230579@univscvm.csd.scarolina.edu

Please start with "Attention Dan"

Thanks tremendously!

1746. Source for Crystal filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 01:09:11 UTC
From: paulbreed@aol.com
Message-ID: <2vvern$2ck@search01.news.aol.com>
Source record: 117180

Does anyone know where one can buy various crystal filters in small quantities?

Can you get then at different frequencies?

Also most filters I have ever seen were band pass in the QST reciever article by
Dr Rhode he mentions a Crystal Roofing filter, I get the impression he means a
crystal low pass filter with a steep skirt. I have never seen a crystal lowpass filter?
How is one constructed????

1747. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 02:16:14 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Jul13.021614.2212@vlsi.polymtl.ca>
Source record: 117184

In article <Csu18L.I72@ac.tandem.com> a-rickf@ac.Tandem.com writes:
>In article 0017A12F@hookup.net, tallath@hookup.net (Gordon R Beatty) writes:
>> ... I'm searching for what has been coined as a 'piston trimmer'
>> capacitor. From what I know it is a variable capacitor. ....
>
stuff deleted
>
>A piston trimmer capacitor physically looks like an insulative tube with an
>electrode on the outside (plated or foil wrapped) and an adjustable element
>that looks like a slug that slides in and out of the tube. The amount of
>capacitance, as you might guess, varies relative to the amount of the two
>conductive parts that are adjacent to one another (overlap?). Works just like
>any other variable cap, but normally uses the tube as dielectric instead of
>air (standard rotary variable) or air and mylar insulator (compression trimmer)
>
>They used to be available from Allied, etc (years ago), and at all the surplus
>places. I haven't seen one in years, but that doesn't mean theyre not still
>available, just that I've not been looking for any. Typical size of the ones

more stuff killed...

Most of the inexpensive (read *cheap*) piston trimmers are manufactured as
the above paraghaph describes. The -good- piston trimmers are usually made
of hi Q ceramic or Sapphire dielectric and the plates are usually concentric
circlular that mesh as you turn the adjustment control (usually a standard
flat slot). These caps are available in ranges from as little as 0.5pF to
about 40pF or so. These caps are used in microwave circuits and are also
found in circuits that require stable temperature/mechanical characteristics
you would need in a VCO or filter. There are several manufacturers that
have these caps as stock items; Johanson (probably the most popular), Voltronicsis another
and Sprague-Goodman are just a few off the top of my head. I know
there are at least a few more manufacturers that offer these caps as stock
itmes. Prices range from as low as $5 to as high as $25.

Nick
--
****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *

****

1748. Avatar Magnetics belly up?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 10:22:37 UTC
From: harrisok@admvax.sonoma.edu
Message-ID: <1994Jul13.022237.1@admvax.sonoma.edu>
Source record: 117185

I was just going through an old ARRL Handbook ('86) and came upon an interesting article about a 30 amp 13.8v power supply that I though I might try to build. I thought I would see if the listed manufacturers still made the parts.

The power transformer is a 117v. primary / 25.4vct secondary @ 34 amps (AV-399 by Avatar Magnetics in Indianapolis, IN) I decided this would be a good place to start and attempted to locate their phone number through directory assitance. No luck. I guess Avatar Magnetics has gone belly up?

Back to the drawing board I guess--
Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1749. How to design a button cell holder : suggestions

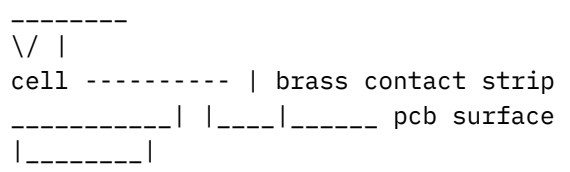
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 13:20:23 UTC
From: jon_sree@world.std.com
Message-ID: <JON_SREE.94Jul13082023@world.std.com>
Source record: 117186

(Originally in sci.electronics; now posting to rec.* groups. Thanks)

My latest pcb takes 3 button cells (0.45" dia and about 0.2" high).
I'm looking for hints on how to make connections to the cells.

I have a serious height restriction, so the cells have to be placed
side-by-side, in a triangular pattern, not stacked up in the
conventional way.

I have three 0.45" dia holes in the pcb, and each cell will be held
in place by friction. Now the problem is how to make contact. Ideally,
I'm looking for a thin brass strip which can be bent to make a springy
contact with the cell.



similar brass contact on other side also

Where can I find such a brass strip ? This method of contacting is the
same as used on commercial cell holders, I think. Of course, they make
them in millions qty. Where can I find brass contact strips like
this in modest (100s) qty ? Or is there a place I can get a roll
of brass strip, and my assy shop can bend them the right way.

Any hints most welcome.

Thanks,

/ Jon Sreekanth

Assabet Valley Microsystems, Inc. | Fax and PC products
5 Walden St #3, Cambridge, MA 02140 | (617) 876-8019
jon_sree@world.std.com |

1750. Re: Poor Man's Packet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 14:14:27 UTC
From: mack@ncifcrf.gov
Message-ID: <Csvu84.CpE@ncifcrf.gov>
Source record: 117187

In article <eamurashie.38@mail.beckman.com> eamurashie@mail.beckman.com (Ed Murashie) writes:
> That
>got me hooked on learning about packet radio, which used up my
>entire weekend. Boy, did my girlfriend get mad!
>
> Thanks,
> Ed Murashie KE6FJU
The solution is to get a newgirlfriend |-)

Joe Mack NA3T
mack@ncifcrf.gov

1751. Re: 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 15:04:37 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CsvwJq.B9n@freenet.buffalo.edu>
Source record: 117192

In a previous article, tallath@hookup.net (Gordon R Beatty) says:

> I was wondering if any of you fine gentleman could answer a simple
>question for me. I'm searching for what has been coined as a 'piston trimmer'
>capacitor. From what I know it is a variable capacitor but when I ask for it
>at Wackid's, Radio Shack, and electronics stores they either don't know what
>I'm asking for or have a vague idea what I'm talking about but can't seem to
>convey a good description of it to me.
>
> This problem is compounded by the fact that I don't know what it looks
>like and don't know where I should look for one. I've checked the FAQ with no
>success. Could someone explain what it is, what it would probably look like,
>and since no one here - where I am, not in this newsgroup - knows what I'm
>asking for, could someone give an order number or suggest a good place to
>mail-order from that might have some.
>
>
Piston caps are usually a small variable, low inductance, used as trim cap.
Glass or ceramic tube dielectric containing a movable slug inside, together
with silver plated outside.

DAN's Small Parts and Kits
1935 S 3rd West #1
Missoula, MT 59801 (406)543-2872 voice or fax

has three items in a recent catalog:

ceramic 0-10 pF
glass 0-5 pF
glass 2-15 pF

Good luck, Kurt, N2TTE

--

1752. 11C90 Scaler IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 15:28:30 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CsvxnK.EMC@freenet.buffalo.edu>
Source record: 117195

Can anyone steer me onto a source of one or several of the
11C90 Scaler/Prescaler IC. It is a 16-pin dip which will
divide by 10/11 at 500 MHz. or more. I understand that they
are no longer being made (Fairchild, National, ?). Perhaps
there is an improved replacement ?

Any help would be appreciated.

email: aa450@freenet.buffalo.edu

Thanks, Kurt, N2TTE
--

1753. Crowbar ciruit needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 15:30:03 UTC
From: eugener203@aol.com
Message-ID: <30119r$dr9@search01.news.aol.com>
Source record: 117188

Anybody know where I can find a simple crowbar circuit for a 12 volt 10 amp supply. Any information would be greatly appreciated.

Thanks Gene

1754. Plessey SL6440 mixer source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 16:25:46 UTC
From: rlt@ssd.intel.com
Message-ID: <Csw0Az.pM@SSD.intel.com>
Source record: 117189

Gang,
Does anybody know of a source for the Plessey SL6440
high level mixer? I've got to try this puppy out.

Thanks,

Roger Traylor
rlt@ssd.intel.com

--
Roger Traylor
rlt@ssd.intel.com
Intel Corporation - Supercomputer Systems Division
Beaverton, OR 97006

1755. Re: HELP with air variable cap connections

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 16:44:55 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3015m7$nfj@hpscit.sc.hp.com>
Source record: 117191

In article <1994Jul12.164519.1@csusys.ctstateu.edu>,
<white@csusys.ctstateu.edu> wrote:
>
>I have a Millen ##20075 85pf air variable, that will serve as the
>tuning cap for the W7EL &MHz Optimized rig. There is only 1 lug
>on the cap.....and I am assuming that the connection to ground can be
>made to either of 2 posts that support the fixed (non-rotating) blades of
>the cap? Help?
>73 es much gratitude de N1QVE
>Harry
>white@csusys.ctstateu.edu
>

No, you want to connect the ungrounded end of the circuit to the
posts and ground the lug. This is so the movable plates, and hence
their bearing and shaft are at ground.

Rick N6RK

1756. DC - DC converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 18:18:21 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <301b5d$mpq@adm09.iac.honeywell.com>
Source record: 117190
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I need to convert a 10 - 13 volt source (ie. marine battery in
various stages of discharge) to a constant 15v at abt 1.5 amps.
It needs to be small and low-cost. I was thinking of using a
switched-mode-regulator in boost configuration, but can't find
any literature on sizing the inductor. Does anyone have any info
about this?
Also, there are a bunch of SMPS IC's out there. Anyone with
experience using them care to suggest which ones would be
useful for this application, and be readily available?

Thanks,

Alf NU8I/G4ABB

Alf Green | Tel (602) 863 5842 | An organised person is just
Honeywell IAC | Fax (602) 789 4990 | too lazy to hunt for things.
Phoenix AZ | alf@agreen.iac.honeywell.com |
==

1757. Re: Crowbar ciruit needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 19:17:11 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.774127031@aries>
Source record: 117193

eugener203@aol.com (EugeneR203) writes:

>Anybody know where I can find a simple crowbar circuit for a 12 volt 10
>amp supply. Any information would be greatly appreciated.

>Thanks Gene

A Motorola linear devices data book, look at the MC3423 data sheets.
Also, a schematic for an Astron power supply.

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

1758. Re: How to design a button cell holder : suggestions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 20:25:28 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CswBEH.BqF@utnetw.utoledo.edu>
Source record: 117198

Jon,

I would check out a local hobby shop for thin brass stock. There are several shops in the Toledo OH area that carry a variety of different brass pieces for use in model railroad, airplanes, ect.

Patrick
KB8PYM
REUSE-RECYCLE
Good planets are hard to find (and I can prove it!)

1759. Re: Keyers and Positive/Negative keylines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 21:30:21 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1307941730210001@k4dii.ksc.nasa.gov>
Source record: 117197
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <YEE.94Jul8122741@mipgsun.mipg.upenn.edu>, yee@mipg.upenn.edu (Conway Yee) wrote:
> I reasoned that there are several possibilities out there:
> 2) the rig could be positive or negative key line

Conway-

Back in the 70's, an article was published in QST, describing the "WB4VVF Accukeyer". Follow-up articles provided memory capability. The keyer was quite popular, and eventually appeared in the ARRL Handbook.

Rigs in common usage then, were primarily the grid-block keying variety, with a relatively high, negative voltage on the key line. The Accukeyer output uses a 2N2222 (NPN) driving a high voltage 2N4888 (PNP) transistor, which keys the negative voltage to ground.

When I wanted to update my Accukeyer for a new solid-state TS-120S, I removed the 2N4888 from its socket, and moved the key line to the 2N2222 collector. Now, after many years in that configuration, I find that this modification was really not necessary! With a positive keying voltage, the PNP collector-to-base junction is forward biased, connecting the key line to the 2N2222 collector. Unless a rig requires too high a keying current, has too high a positive voltage for the 2N4888 base-emitter junction or can't stand 0.7 volts diode offset, the Accukeyer output circuit should work quite well with either polarity.

Other transistors that are possible substitutes for a 2N4888 in the Accukeyer configuration, include:

2N398A (Used in Heath HD-10 Keyer)
2N398B
2N1234
2N2042, 2N2042A
2N2043, 2N2043A
2N3495
2N3497
2N4889
2N5400
2N5401
HEP-239 (Now obsolete, Motorola replacement transistor)

73, Fred, K4DII

1760. Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 21:49:20 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <301nh0$97g@bronze.lcs.mit.edu>
Source record: 117194
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,sci.electronics

With all this discussion about environmentally-friendly chemicals, I have to relate my conversation with MCM regarding an order of mine. The implications are scary for home-based techs such as ourselves.

I made a regular order with MCM several weeks ago that included a can of compressed air for a friend of mine ("Generation 2000 Air Blast", #20-1620). I inquired about my order and learned from the salesclerk that it had been shipped today (7/13) , but that there was a footnote to the effect that the chemical could not be sold to me. I *had* been expecting the UPS truck to show up this week (and waited at home too. Wonderful.) , but that wasn't the worst of it.

The MCM catalog has a notice stating that EPA regulations prohibit them from selling certain chemicals containing Class I CFC's without a tax-exemption number or business license. My Generation 2000 can apparently was one of these products.

I asked the salesclerk which compressed air products I could buy, and was cited some products, mostly Chemtronics E-series. These cost in the range of $10-$16, plus a $7 materials-handling fee. At a final cost of $17-$23 for a 12-oz. can, my friend understandably opted out.

On my last order to MCM, I sent for a Generation 2000 cleaner/lubricant, which *was* sent to me. Their ads mentioned the products were "safe for the ozone", thus I thought I should be able to buy from that series. It is _not_ made clear in the catalog which items are restricted and which are not.

When I brought this up, the clerk explained that the catalog (the latest version) had been printed up before certain new regulations went in effect. If I am to believe this, the EPA is very capricious on which chemicals to restrict, and that MCM can but merely blow in the wind. I'm not sure I believe this, but it does sound plausible.

Anyone who has fixed electronics for any length of time knows that some chemical products are indispensable. I live near the ocean, and as any coastal dweller can tell you, sea air and electrical contacts don't mix. I can't begin to mention how many pieces of equipment I would have to discard --in a landfill--if I didn't have some way of cleaning them.

Worse yet, I suspect that some of the "environmentally-friendly" subsitutes are downright dangerous: In that same MCM catalog, there's an ad for Chemtronics' Electro-Wash 2000 cleaner. In fine print on the bottom of the can, it reads: "DANGER!: EXTREMELY FLAMMABLE! LIQUID AND VAPOR MAY CAUSE FLASH FIRE!" Wonderful. Imagine having to use that stuff at home or worksite. We're supposed to think the (non-trivial) risk of fire is

preferable to the (questionable) risk to the ozone layer.

It's bad enough that I have to use acetone because rosin flux-remover is too expensive; I will NOT buy Chemtronics under these circumstances. Just imagine accidentally spraying the stuff into equipment you forgot to unplug!

I suspect it's no good complaining about this, as the EPA and the politicians would pat me on the head and say, "Gee, don't you think you should leave that stuff to the professionals?" :(And as for the business folks who have that extra paperwork to fill, I guess "that's tough, they can do it".

Must I stockpile chemicals? What are the chemicals I'm allowed to buy? Does anyone have a no-hassle source other than someone's back alley? Can you still buy Caig? Will I still be *allowed* to buy anything stronger than denatured alcohol?

...Dave

--
| David Moisan, N1KGH /^_/^\ moisan@silver.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

1761. Re: type-C RF connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 22:11:16 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1307941811160001@k4dii.ksc.nasa.gov>
Source record: 117199

In article <steve-080794121655@brainiac.hi.com>, steve@hi.com (Steve Byan) wrote:
> I've just purchased a CU-1388/FLR-9 receiver multicoupler from Fair Radio.
> Fair's catalog says it has "type-C" RF connectors. I can't seem to find a
> reference to type C connectors anywere, much less a place to procure some.
> They look like overgrown BNC's. Anyone know what they are, and where I can
> buy some? (Maybe they're MHV's?)
> Finally, the case is stamped "Do Not Operate Without Airflow".

Steve-

There is a company called Pasternack Enterprises, Coaxial Products Division, that has C connectors and adapters in their catalog (1993 edition). They are at Post Office Box 16759, Irvine, CA 92713. Telephone (714)261-1920.

Guessing by the catalog pictures, C connectors may be about the size of type N or UHF connectors. If so, you may be able to replace them with something more common, especially if you don't need high power.

As far as airflow is concerned, are there any active components involved? What generates heat? If the multicoupler has only passive, high-Q components, the cooling air may have been required for very high RF power levels. For low power, it may not be needed.

73, Fred, K4DII

1762. Re: DC - DC converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-13 22:22:52 UTC
From: charlier@lsid.hp.com
Message-ID: <CswGu4.14r@hpcvsnz.cv.hp.com>
Source record: 117196
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Alf Green (alf@agreen.iac.honeywell.com) wrote:
: I need to convert a 10 - 13 volt source (ie. marine battery in
: various stages of discharge) to a constant 15v at abt 1.5 amps.
: It needs to be small and low-cost. I was thinking of using a
: switched-mode-regulator in boost configuration, but can't find
: any literature on sizing the inductor. Does anyone have any info
: about this?
: Also, there are a bunch of SMPS IC's out there. Anyone with
: experience using them care to suggest which ones would be
: useful for this application, and be readily available?

: Alf NU8I/G4ABB

Alf:

Linear Technology makes a spiffy IC that would about fit the bill.
The LT-1070 is a boost mode switching regulator will handle about 5A.
All that is needed is a handful of resistors, capacitors, and a 150 uH
inductor capable of handling the current. The IC goes for about $5 or
so, I think.

They even give out little design program to run on your PC, to size
the caps and inductor for the current and ripple requirements. Since
you work in the industry, I bet a call to their local sales office
would get you a copy.

I've used the buck regulator (LT1074) to make a 5A battery charger
(the reverse of your situation), and been quite happy with it.

Charlie Panek KX7L Hewlett Packard Company
charlier@lsid.hp.com Lake Stevens Instrument Division
Everett, Washington

1763. Re: Plessey SL6440 mixer source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 00:21:36 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <3020eg$khs@vixen.cso.uiuc.edu>
Source record: 117200

Roger Traylor (rlt@ssd.intel.com) wrote:
> Gang,
> Does anybody know of a source for the Plessey SL6440
> high level mixer? I've got to try this puppy out.

> Thanks,

> Roger Traylor
> rlt@ssd.intel.com

Try DC Electronics, Inc. I've got one with data sheet last Nov.
Data looked very promising, and we intended to use this in
our new radar receiver design. But nothing happened since,
cause I've been pretty busy (or, maybe, lazy).
Left their catalog at home, but their addr. is

DC Electronics, Inc.
P.O.Box 3203
Scottsdale, AZ85271-3203

Han.. KB9BQO / HL1AMS
--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

1764. Re: NEED bare-bones FM transmitter plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 01:16:36 UTC
From: jgrubs@voxbox.norden1.com
Message-ID: <DqiFPc3w165w@voxbox.norden1.com>
Source record: 117201

gt0265d@prism.gatech.edu (Genesis) writes:

> Hello all!
>
> I picked up one of those recordable greeting cards the other day... even got
> it free, since it was a Father's Day card they no longer could sell! Anyway,
> after playing with it (much fun) I decided that I could hook it up to a
> tiny FM transmitter and have a club event, using the card's circuit to
> record a little message like "This is KD4UGI and you can't find me, hahaha!"

Wouldn't those make unique QSL cards to coax a card out of that
rare DX country you need?

+---+
| Jim Grubs, W8GRT Voxbox Enterprises THIS SPACE FOR RENT |
| jgrubs@voxbox.norden1.com 6817 Maplewood Ave. RATES REASONABLE |
| Home: 419/882-2697 Sylvania, Ohio 43560 OPEN TO ANY OFFERS |
| AMATEUR RADIO - The National Park of the Mind |
+---+

1765. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 01:17:33 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul14.011733.8388@ke4zv.atl.ga.us>
Source record: 117204

In article <9407110930.aa16788@argos.ee.surrey.ac.uk> M.Willis@ee.SUrrey.ac.UK writes:
>You want the VHF Handbook, but beware, it is going to be replaced very
>soon with a new edition. The DX book is also very good but not for the USA
>as we have different bands and power limits in Europe. A lot still applies
>but a lot does not.

The DX book is worthwhile for the propagation section alone. They're
both great resources, buy them both, and the two volume Microwave set
as well. While a lot of the circuitry in the project section is based
on European components, the wealth of ideas is incredible. I've rarely
been disappointed buying a RSGB publication. The quality of writing is
also a large cut above the typical ARRL publication.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1766. Re: RF & IF tank alignment hints

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 01:22:34 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul14.012234.8467@ke4zv.atl.ga.us>
Source record: 117205

In article <Css5HH.FCD@fore.com> ed@fore.com (Ed Bathgate) writes:
>I am preparing to align an older hf rig, Tempo One,
>and wonder if there are any good tips on aligning the rx & tx circuits.
>
>I have a pseudo RF generator, "a modified dip meter oscillator" in an old
>heathkit RF generator box. Its not accurate freq wise, I dont want to
>screw up and Peak the IF off center. I thought of just using the antenna input
>and peaking from the bottom up.
>
>Comments?
>Tips?
>Ideas?
>Things not to do?

A thing not to do is to align a radio that hasn't had critical
frequency sensitive parts replaced. Alignment rarely, if ever,
drifts in commercial equipment.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1767. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 03:02:03 UTC
From: jimn0oct@aol.com
Message-ID: <3029rb$o5g@search01.news.aol.com>
Source record: 117202

In article <301nh0$97g@bronze.lcs.mit.edu>, moisan@bronze.lcs.mit.edu (David Moisan) writes:

<<Must I stockpile chemicals? What are the chemicals I'm allowed to buy? Does anyone have a no-hassle source other than someone's back alley? Can you still buy Caig? Will I still be *allowed* to buy anything stronger than
denatured alcohol?

...Dave>>

As a chemist, Dave, I would say stockpile. It won't be long before the average citizen (whether right or wrong) won't be able to buy any solvents. Buy compressed air that contains AIR, not chlorofluorocarbons. Acetone is probably a bigger hassle because it will melt the plastic casing on your rig and some of its components, as well as being a fire hazard.

72, Jim N0OCT

1768. Re: Plessey SL6440 mixer source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 12:33:29 UTC
From: zlau@arrl.org
Message-ID: <1994Jul14.123329.22263@arrl.org>
Source record: 117216

Roger Traylor Beaverton, OR (rlt@ssd.intel.com) wrote:
: Gang,
: Does anybody know of a source for the Plessey SL6440
: high level mixer? I've got to try this puppy out.

Try Bill Kelsey N8ET. I think he got a whole bunch of them
via the UK QRPers when they came to Dayton last year.
He also sells UK QRP kits.

Phone 419-423 5643, though I think he has a day job and
has to travel occasionally.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1769. Re: Avatar Magnetics belly up?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 12:39:18 UTC
From: zlau@arrl.org
Message-ID: <1994Jul14.123918.22382@arrl.org>
Source record: 117217

n6HMG harrisok@admvax.sonoma.edu wrote:
: I was just going through an old ARRL Handbook ('86) and came upon an
: interesting article about a 30 amp 13.8v power supply that I though I might try
: to build. I thought I would see if the listed manufacturers still made the
: parts.

: The power transformer is a 117v. primary / 25.4vct secondary @ 34 amps
: (AV-399 by Avatar Magnetics in Indianapolis, IN) I decided this would be a
: good place to start and attempted to locate their phone number through
: directory assitance. No luck. I guess Avatar Magnetics has gone belly up?

According to the 94 Handbook, chapter 35, the company cross references to
Ronald C Williams W9JVF 240 Tamara Trail
Inidanapolis IN 46217. No phone number listed, though I believe
we try to list them when the supplier agrees.

It isn't unusual in the extremely competitive amateur market for
sellers not to pay for a relatively expensive business phone line.
Thus, directory assistance is rarely helpful.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1770. Re: How to design a button cell holder : suggestions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 12:42:27 UTC
From: zlau@arrl.org
Message-ID: <1994Jul14.124227.22461@arrl.org>
Source record: 117018

Jon Sreekanth (Cambridge, MA) (jon_sree@world.std.com) wrote:

: (Originally in sci.electronics; now posting to rec.* groups. Thanks)

: My latest pcb takes 3 button cells (0.45" dia and about 0.2" high).
: I'm looking for hints on how to make connections to the cells.

: I have a serious height restriction, so the cells have to be placed
: side-by-side, in a triangular pattern, not stacked up in the
: conventional way.

: I have three 0.45" dia holes in the pcb, and each cell will be held
: in place by friction. Now the problem is how to make contact. Ideally,
: I'm looking for a thin brass strip which can be bent to make a springy
: contact with the cell.
: ________
: \/ |
: cell ---------- | brass contact strip
: ___________| |____|______ pcb surface
: |________|

: similar brass contact on other side also

Try Small Parts, Inc. 305-557-0822. They sell a variety of different
hardnesses--you might tell them exactly what you are going to use it
for.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1771. Re: Wanted: Popular Electronics article from May 94 issue

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 13:34:28 UTC
From: mallorye@freenet2.scri.fsu.edu
Message-ID: <303et4$lb6@freenet3.scri.fsu.edu>
Source record: 117208

Distribution:
References: <2vs3ud$6uk@vixen.cso.uiuc.edu>

It's in the mail. I was looking at it last night. 73.

1772. Re: How to design a button cell holder : suggestions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 13:35:53 UTC
From: landisj@drager.com
Message-ID: <1994Jul14.093554.106@drager.com>
Source record: 117209

In article <JON_SREE.94Jul13082023@world.std.com>, jon_sree@world.std.com (Jon Sreekanth) writes:

>
> (Originally in sci.electronics; now posting to rec.* groups. Thanks)
>
> My latest pcb takes 3 button cells (0.45" dia and about 0.2" high).
> I'm looking for hints on how to make connections to the cells.
>
> I have a serious height restriction, so the cells have to be placed
> side-by-side, in a triangular pattern, not stacked up in the
> conventional way.
>
> I have three 0.45" dia holes in the pcb, and each cell will be held
> in place by friction. Now the problem is how to make contact. Ideally,
> I'm looking for a thin brass strip which can be bent to make a springy
> contact with the cell.
> _______
> \/ |
> cell ---------- | brass contact strip
> __________| |____|_____ pcb surface
> |_______|
>
> similar brass contact on other side also
>
> Where can I find such a brass strip ? This method of contacting is the
> same as used on commercial cell holders, I think. Of course, they make
> them in millions qty. Where can I find brass contact strips like
> this in modest (100s) qty ? Or is there a place I can get a roll
> of brass strip, and my assy shop can bend them the right way.
>
> Any hints most welcome.
>
> Thanks,
>
> / Jon Sreekanth
>
> Assabet Valley Microsystems, Inc. | Fax and PC products
> 5 Walden St #3, Cambridge, MA 02140 | (617) 876-8019
> jon_sree@world.std.com |

Ideally you'd want to use a phoshor bronze strip. This is the stuff that they make finger stock out of. Has good memory - will retain tension to the contact. Also very conductive. You may be able to cut up a piece of finger stock to use the individual "fingers" for contacts. Or try a scrapyard. Brass has no

"memory". You put the battery in and the clip will open, and will stay open.
The battery will fall out.
Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WB3JOE.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

1773. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 13:37:47 UTC
From: ed@fore.com
Message-ID: <Csxn6z.L78@fore.com>
Source record: 117211

Flammable / vs / ozone killing chemicals...

Acetone is probably a bigger hassle because it will melt the plastic
casing on your rig and some of its components, as well as being a fire
hazard.

We use rosin flux solvents, acetone, tf, ... Recently we switched to
Chemtronics (R) Flux-Off NR 2000.

DANGER EXTREMELY FLAMMABLE is printed in red on the front label.

I looked at the ingredients:

isopropanol (alcohol I believe, flammable)
ethanol " "
Ethyl acetate ? sounds like a gasoline additive
methanol ? the same stuff in auto racing fuel?
methyl isobutyl ketone ? Methanol? Iso-butane(cigerette lighter fuel)
Propane/isobutane I run my blowtorch on propane!

NICE STUFF!

WE TOOK A CAN OUT ON THE OUTSIDE BACK LOADING DOCK STEPS, SPRAYED A BUT ON
THE CEMENT AND LIT IT! IT MADE 1' HIGH FLAMES FROM A 2" SPOT ON THE CEMENT.

WE TRIED TO STOMP IT OUT, IT KEPT BURNING!!! UNTIL THE SPOT DISAPPEARED.

ONE CRAZY SPRAYED IT DIRECTLY ONTO THE FLAME - WOOSH - INSTANT BALL OF FIRE
ABOUT 4 FEET HIGH!

NICE STUFF!
I wonder if you could start the lawnmower with this stuff?

There has to be something less flammable to clean.

Ed Bathgate N3SDO
Ed@fore.com

Disclaimer: My own tests & my own opinions, I dont represent FORE systems
official opinions. Chemical ingredients are CHEMTRONICS

1774. Re: NEED bare-bones FM transmitter plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 13:42:50 UTC
From: ed@fore.com
Message-ID: <CsxnFF.LHK@fore.com>
Source record: 117212

Bare bones fm transmitter:

I saw a mini fm tx kit at radio shack for 9.95. It had a pc board about the size of a 9v battery, condenser mike, 2 transistors/fets, caps, tuned transformers, ... Id be willing to bet that some enterprising ham could move this to 2m by removing a turn or 2 or 5 from the tuned coils. Change the pa bias, attach a dipole - wham - micro foxhunt transmitter.

Ed N3SDO

1775. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 15:50:55 UTC
From: davies@mobira.nmp.nokia.com
Message-ID: <303msv$8fi@noknic.nokia.com>
Source record: 117021

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
> The DX book is worthwhile for the propagation section alone. They're
> both great resources, buy them both, and the two volume Microwave set
> as well. While a lot of the circuitry in the project section is based
> on European components, the wealth of ideas is incredible. I've rarely
> been disappointed buying a RSGB publication. The quality of writing is
> also a large cut above the typical ARRL publication.

The current edition of the VHF Handbook is really quite out of date in places, and the long awaited revision ought to be a vast improvement - I'd agree about waiting, and in the meantime buy the DX book, which is pretty new. Unless you like valves.

The Microwave set - it is three volumes - with vol 3 having the band chapters in it - but from 1.3GHz upwards. From the RSGB, members can get a good deal on the set of 3 - about 25 UK pounds - from what I hear, US prices are somewhat inflated.

Steve G4KNZ

1776. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 16:19:19 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jul14.161919.20600@galileo.cc.rochester.edu>
Source record: 117206

If you are trying to clean off the rosin from circuit boards, I have *HEARD* that methanol-based dry gas (for cars) will do the job.

There is another possibility, though, that might be even better. There are now electronic solders that use water-soluble flux. When I was working as an electronics technician for the physics department, we switched over to this stuff and actually liked it BETTER than the rosin core. It didn't scorch as easily, produced less smoke and the only thing we needed to de-flux the boards was a running hot water and a paint brush to gently scrub the board.

It DID have one drawback, though, in that if you didn't de-flux, it began to attack the copper, so I guess it is slightly acid. However, since hot water is REALLY cheap and easy to handle, it shouldn't be a problem to do a good job of the de-fluxing.

The stuff we used was called Hydro-X and we bought it from Newark Electronics.

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.
++
In nature, stupidity gets you killed.
In the workplace, it gets you fired.
In politics, it gets you re-elected.
++

1777. RE:Avatar Mag.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 16:27:18 UTC
From: Bren.Doreck@utmb.EDU
Message-ID: <01HEP0XGS6EE000ZNC@BEACH.UTMB.EDU>
Source record: 117207

Ken Harrison wrote about Avatar Magnetronics going belly up. That is a correct statement. They were bought out by Digital Communications Associates. The address and phone are:

DCA
1000 Alderman Dr.
Alphretta, GA 30202
Phone 214-484-5651

Hope this helps. I know that they do not manufacture many Avatar Products, but do sell refurbished ones.

73's de KC5GWA
Bren Doreck
bdoreck@beach.utmb.edu

1778. K9NG AND G3RUH MODULATION

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 19:25:38 UTC
From: shane@mdd.comm.mot.com
Message-ID: <3043fi$hhe@daffyduck.mdd.comm.mot.com>
Source record: 117210
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

Certain packet nets in my area are using the AEA PK-96 packet controller
for 9600 baud communication. I've been thinking about building a DSP-
based modem that would implement the same modulation techniques used
in the PK-96. According to AEA literature this unit uses K9NG and G3RUH
compatible direct FM. Where are these techniques described?

-=-
Hugh Shane | 206 487 5909 (PST)
Motorola Wireless Data | N7UAX
shane@mdd.comm.mot.com | "Ain't nobody gets outa here,
| without singin' the blues"
-=-

1779. Pin Diode T/R switching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-14 21:18:24 UTC
From: beau@enterprise.america.com
Message-ID: <304a30$leg@enterprise.america.com>
Source record: 117213

```
I am consrtucting a control box on my antenna tower. Included in the box
are VHF & UHF preamps and power amps. I would like to be able to switch
the amplifiers in and out of circuit using Pin Diodes to sense the RF
and block the 40 watts rf from getting into my preamp. Can this be done
without the use of relays?
I need the schematic of such a circuit or the source for it. I have looked
at the circuit in the ARRL handbook, but it uses a relay...which I am
trying to avoid..the price of these relays here in Fla. is quite high.

_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

1780. Pin Diode T/R switching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 01:02:25 UTC
From: beau@enterprise.america.com
Message-ID: <304n71$qe@enterprise.america.com>
Source record: 117022

```
I am consrtucting a control box on my antenna tower. Included in the box
are VHF & UHF preamps and power amps. I would like to be able to switch
the amplifiers in and out of circuit using Pin Diodes to sense the RF
and block the 40 watts rf from getting into my preamp. Can this be done
without the use of relays?
I need the schematic of such a circuit or the source for it. I have looked
at the circuit in the ARRL handbook, but it uses a relay...which I am
trying to avoid..the price of these relays here in Fla. is quite high.

_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

1781. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 03:28:05 UTC
From: jimn0oct@aol.com
Message-ID: <304vo5$ech@search01.news.aol.com>
Source record: 117020

In article <Csxn6z.L78@fore.com>, ed@fore.com (Ed Bathgate) writes:

>isopropanol (alcohol I believe, flammable)
>ethanol " "
>Ethyl acetate ? sounds like a gasoline additive < ----
!!!!NOT!!!!
>methanol ? the same stuff in auto racing fuel?<--------YES
>methyl isobutyl ketone ? Methanol? Iso-butane(cigerette lighter
fuel)<--NOT!!!!!!
>Propane/isobutane I run my blowtorch on propane!

No, not all these things are what they seem. The only alternatives (now)
tosolvent (please read either ozone killer or flammable) are water based
things (probably not a good option) or solid carbon dioxide blasting
(loud, suffocation hazard)

Dats de way it is.....

72, 73, whatever it takes....Jim N0OCT

1782. UNKNOWEN GASFETS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 03:41:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.824.2645@aquila.com>
Source record: 117026

Hello All I brought a few Gasfets at a Hamfest a few Years ago, These
are low end devices. I can't seem to fine a cross reference to the
device numbers, They are labeled
K124
M48

These devices do have one long lead, Does anyone have a cross reference
or data sheet for them. Thanks ahead of time. 73 de WC9C AL

* RM 1.3 00559 *

1783. Re: CB sets to 10 meters and 6 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 04:18:05 UTC
From: Thomas Xydis <tgxydis@delphi.com>
Message-ID: <xy7Ti2l.tgxydis@delphi.com>
Source record: 117019

Interesting... I too have a Ph.D. in electrical engineering (from the Univ of Michigan). I have built the Ramsey kit and had no problems at all. Actually, I received one of the first kits and they left out some resistors. This may not be very fair thoug
h since I also was an RF and general high frequency engineer for 15 years before getting my Ph.D. As such I have access to a very good lab and so was able to do more to the Ramsey kit than most kit builders.
At any rate, I don't think that you would have any problem. If you want a SSB rig than I suggest that you roll your own design. There are many new RF IC's available which make RF design more like stringing 7400 chips together all the time. For an SSB ra
dio I would recommend looking at either Harris, Maxim or RFmicRF microdevices for their integrated transmitter chips. Analog Devices is making a push in a big way and have a new receiver IC available with a complete synchronous detector.

73 Tom Xydis KC9DM

1784. Performance of Toshiba TA7758P chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 10:09:32 UTC
From: mike@io.org
Message-ID: <305n8s$i65@ionews.io.org>
Source record: 117023
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Is anyone familiar with the Toshiba TA7758p chip?

It's inside an inexpensive sw radio I have (a Pulser).

Is it a 'receiver on a chip'? .. an IF module?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

1785. Guide to the Personal Radio Newsgroups

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 11:01:28 UTC
From: pschleck@unomaha.edu
Message-ID: <radio/personal-intro-1-774270084@unomaha.edu>
Source record: 117024
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.info,rec.answers,news.answers

Posted-By: auto-faq 3.2.1.2
Archive-name: radio/personal-intro
Revision: 1.5 12/18/93 14:15:53
Changes: new mailing lists, .packet rmgroup, and .policy updates

(Note: The following is reprinted with the permission of the author.)

This message describes the rec.radio.amateur.*, rec.radio.cb, rec.radio.info, and rec.radio.swap newsgroups. It is intended to serve as a guide for the new reader on what to find where. Questions and comments may be directed to the author, Jay Maynard, K5ZC, by Internet electronic mail at jmaynard@oac.hsc.uth.tmc.edu. This message was last changed on 18 September 1993 to add the mailing lists for the new rec.radio.amateur newsgroups, to note the rmgroup of rec.radio.amateur.packet, and to officially retire some (in)famous threads of discussion on rec.radio.amateur.policy.

History
=======

Way back when, before there was a Usenet, the Internet hosted a mailing list for hams, called (appropriately enough) INFO-HAMS. Ham radio discussions were held on the mailing list, and sent to the mailboxes of those who had signed up for it. When the Usenet software was created, and net news as we now know it was developed, a newsgroup was created for hams: net.ham-radio. The mailing list and the newsgroup were gatewayed together, eventually.

As the net grew, and as packet radio came into vogue, packet discussion began to dominate other topics in the group and on the list. This resulted in the logical solution: a group was created to hold the packet discussion, and another corresponding mailing list was created as well: net.ham-radio.packet and PACKET-RADIO, respectively.

These two groups served for several years, and went through Usenet's Great Renaming essentially unchanged, moving from net.ham-radio[.packet] to rec.ham-radio[.packet]. Readership and volume grew with the rest of the network.

The INFO-HAMS mailing list was originally run from a US Army computer at White Sands Missile Range, SIMTEL20. There were few problems with this arrangement, but one was that the system was not supposed to be used for commercial purposes. Since one of hams' favorite pastimes is swapping gear, it was natural for hams to post messages about equipment for sale to INFO-HAMS/rec.ham-radio. This ran afoul of SIMTEL20's no-commercial-use restriction, and after some argument, a group was created specifically

for messages like that: rec.ham-radio.swap. This group wasn't gatewayed to a mailing list, thus avoiding problems.

While all this was happening, other folks wanted to discuss other aspects of the world of radio than the personal communications services. Those folks created the rec.radio.shortwave and rec.radio.noncomm newsgroups, and established the precedent of the rec.radio.* hierarchy, which in turn reflected Usenet's overall trend toward a hierarchical name structure.

The debate between proponents of a no-code ham radio license and its opponents grew fierce and voluminous in late 1989 and 1990. Eventually, both sides grew weary of the debate, and those who had not been involved even more so. A proposal for a newsgroup dedicated to licensing issues failed. A later proposal was made for a group that would cover the many recurring legal issues discussions. During discussion of the latter proposal, it became clear that it would be desirable to fit the ham radio groups under the rec.radio.* hierarchy. A full-blown reorganization was passed by Usenet voters in January 1991, leading to the overall structure we now use.

After the reorganization, more and more regular information postings began to appear, and were spread out across the various groups in rec.radio.*. Taking the successful example of the news.answers group, where informational postings from across the net are sent, the group rec.radio.info was created in December, 1992, with Mark Salyzyn, VE6MGS, initially serving as moderator.

In January, 1993, many users started complaining about the volume in rec.radio.amateur.misc. This led to a discussion about a second reorganization, which sparked the creation of a mailing list by Ian Kluft, KD6EUI. This list, which was eventually joined by many of the most prolific posters to the ham radio groups, came up with a proposal to add 11 groups to the rec.radio.amateur hierarchy in April 1993. The subsequent vote, held in May and early June, approved the creation of five groups: rec.radio.amateur.digital.misc (to replace .packet), .equipment, .homebrew, .antenna, and .space.

The Current Groups

I can hear you asking, "OK, so this is all neat history, but what does it have to do with me now?" The answer is that the history of each group has a direct bearing on what the group is used for, and what's considered appropriate where.

The easy one is rec.radio.amateur.misc. It is what rec.ham-radio was renamed to during the reorganization. Any message that's not more appropriate in one of the other groups belongs here, from contesting to DX to ragchewing on VHF to information on becoming a ham.

The group rec.radio.amateur.digital.misc is for discussions related to (surprise!) digital amateur radio. This doesn't have to be the common two-meter AX.25 variety of packet radio, either; some of the most knowledgeable folks in radio digital communications can be found here, and anything in the general area is welcome. The name was changed to emphasize

this, and to encourage discussion not only of other text-based digital modes, such as AMTOR, RTTY, and Clover, but things like digital voice and video as well. The former group, rec.radio.amateur.packet, should be removed by September 21st, 1993. It is obsolete, and you should use .digital.misc instead (or the appropriate new mailing list, mentioned below). The group has .misc as part of the name to allow further specialization if the users wish it, such as .digital.tcp-ip.

The swap group is now rec.radio.swap. This recognizes a fact that became evident shortly after the original group was formed: Hams don't just swap ham radio gear, and other folks besides hams swap ham equipment. If you have radio equipment, or test gear, or computer stuff that hams would be interested in, here's the place. Equipment wanted postings belong here too. Discussions about the equipment generally don't; if you wish to discuss a particular posting with the buyer, email is a much better way to do it, and the other groups, especially .equipment and .homebrew, are the place for public discussions. There is now a regular posting with information on how to go about buying and selling items in rec.radio.swap; please refer to it before you post there.

The first reorganization added two groups to the list, one of which is rec.radio.amateur.policy. This group was created as a place for all the discussions that seem to drag on interminably about the many rules, regulations, legalities, and policies that surround amateur radio, both existing and proposed. Recent changes to the Amateur Radio Rules (FCC Part 97) have finally laid to rest the Great Usenet Pizza Autopatch Debate as well as complaints about now-preempted local scanner laws hostile to amateurs, but plenty of discussion about what a bunch of rotten no-goodniks the local frequency coordinating body is, as well as the neverending no-code debate, may still be found here.

The other added group is rec.radio.cb. This is the place for all discussion about the Citizens' Band radio service. Such discussions have been very inflammatory in rec.ham-radio in the past; please do not cross-post to both rec.radio.cb and rec.radio.amateur.* unless the topic is genuinely of interest to both hams and CBers - and very few topics are.

The rec.radio.info group is just what its name implies: it's the place where informational messages from across rec.radio.* may be found, regardless of where else they're posted. As of this writing, information posted to the group includes Cary Oler's daily solar progagation bulletins, ARRL bulletins, the Frequently Asked Questions files for the various groups, and radio modification instructions. This group is moderated, so you cannot post to it directly; if you try, even if your message is crossposted to one of the other groups, your message will be mailed to the moderator, who is currently Mark Salyzyn, VE6MGS. The email address for submissions to the group is rec-radio-info@ve6mgs.ampr.ab.ca. Inquires and other administrivia should be directed to rec-radio-request@ve6mgs.ampr.ab.ca. For more information about rec.radio.info, consult the introduction and posting guidelines that are regularly posted to that newsgroup.

The groups rec.radio.amateur.antenna, .equipment, .homebrew, and .space are for more specialized areas of ham radio: discussions about antennas,

commercially-made equipment, homebrewing, and amateur radio space operations. The .equipment group is not the place for buying or selling equipment; that's what rec.radio.swap is for. Similarly, the .space group is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter.

Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server.

All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned.

A Few Words on Crossposting
===========================

Please do not crosspost messages to two or more groups unless there is genuine interest in both groups in the topic being discussed, and when you do, please include a header line of the form "Followup-To: group.name" in your article's headers (before the first blank line). This will cause followups to your article to go to the group listed in the Followup-To: line. If you wish to have replies to go to you by email, rather than be posted, use the word "poster" instead of the name of a group. Such a line appears in the headers of this article.

One of the few examples of productive cross-posting is with the rec.radio.info newsgroup. To provide a filtered presentation of information articles, while still maintaining visibility in their home newsgroups, the moderator strongly encourages cross-posting. All information articles should be submitted to the rec.radio.info moderator so that he may simultaneously cross-post your information to the appropriate newsgroups. Most newsreaders will only present the article once, and network bandwidth is conserved since only one article is propagated. If you make regular informational postings, and have made arrangements with the moderator to post directly to the group, please cross-post as appropriate.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"If my car ran OS/2, it'd be there by now" -- bumper sticker
GCS d++ p+ c++ l+ m+/- s/++ g++ w++ t+ r

--
73, Paul W. Schleck, KD3FU

pschleck@unomaha.edu

1786. Re: AM/FM Fax converter for use w/ HamComm interface & JVFAX (long!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 11:08:12 UTC
From: dmb@abacus.demon.co.uk
Message-ID: <CszAxq.1C9@abacus.demon.co.uk>
Source record: 117037
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

In article <2vu9vn$hd2@nanette.pdb.sni.de>,
W.F.Schroeder <schroeder.pad@sni.de> wrote:
>AM/FM converter for wefax reception using JVFAX and the HamComm interface.

Thanks for posting the info Django. Has anyone the time to translate the
documentation, and has anyone tried this circuit out ? Tips on antenna/rx etc.
much appreciated. I hear good things about Hamcom regularly, and would be
interested to try it out for wxsat if I can get hold of a suitable rx.

73

David.
--
David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445
Here's a koan: If you have ice-cream I will give you some. If you have none,
I will take it away from you. (it's an ice-cream koan).

1787. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 12:33:44 UTC
From: zlau@arrl.org
Message-ID: <1994Jul15.123344.23544@arrl.org>
Source record: 117032

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:

: The DX book is worthwhile for the propagation section alone. They're
: both great resources, buy them both, and the two volume Microwave set
: as well. While a lot of the circuitry in the project section is based
: on European components, the wealth of ideas is incredible. I've rarely
: been disappointed buying a RSGB publication. The quality of writing is
: also a large cut above the typical ARRL publication.

Yeah, its probably due to the low standards of the people who buy
our publications. I'm not much of a writer--having never taken a
single college level writing course, but people constantly ask me to
write up more of the stuff I've developed. They ought to bug *real*
writers.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1788. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 14:24:54 UTC
From: ed@fore.com
Message-ID: <CszK1J.5Ao@fore.com>
Source record: 117025

Jim N0OCT corrects Ed in his lack of chemistry knowledge.

>Ethyl acetate ? sounds like a gasoline additive < ----
!!!!NOT!!!!

>methyl isobutyl ketone ? Methanol? Iso-butane(cigerette lighter
fuel)<--NOT!!!!!!

For curiosity, do you know what they are / do?

73.14
Ed

1789. 'Who was that masked capacitor?'

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 16:01:04 UTC
From: jangus@skyld.grendel.com
Message-ID: <774288064snx@skyld.grendel.com>
Source record: 117028

In article <tallath.3.0017A12F@hookup.net> tallath@hookup.net writes:

>
> I was wondering if any of you fine gentleman could answer a simple
> question for me. I'm searching for what has been coined as a 'piston
> trimmer' capacitor.

Quite simply, it is a glass tube (usually 1/4" in diameter) that has been
copper plated on the outside, with a thread adjustable inner part (piston)
that acts as the second plate of a capacitor.

73 es GM from Jeff

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

Hate "Green Card Lottery"? Want to help curb ignorant crossposting on Usenet?
E-mail ckeroack@hamp.hampshire.edu for more information, or read news.groups.

1790. Re: type-C RF connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 16:41:31 UTC
From: steve@hi.com
Message-ID: <steve-150794123345@brainiac.hi.com>
Source record: 117027

In article <fred-mckenzie-1307941811160001@k4dii.ksc.nasa.gov>,
fred-mckenzie@ksc.nasa.gov (Fred McKenzie) wrote:
> As far as airflow is concerned, are there any active components involved?
> What generates heat? If the multicoupler has only passive, high-Q
> components, the cooling air may have been required for very high RF power
> levels. For low power, it may not be needed.

The receiver multicoupler has a two-transistor RF preamp per output to make up for losses in the hybrid splitters. These transistors probably run at a high bias current for better IMD performance. (They are TO-5 cased, and have clip-on heatsink fins. Some have "TRW 02"markings on top.) The mechanical design of the enclosure for this beast does not provide for convection-cooling. It has only a small inlet slot on the right side, and a larger outlet slot on the left side.

I expect that the power dissipation isn't all that high, but without forced-air cooling, the transistors probably wouldn't last long.

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

1791. Re: LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 18:24:24 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <93365@uugate.wa7slg.ampr.org>
Source record: 117036

Running FM in the LF (LowFER) band is pretty easy... but doing so
effectively depends on what you intend to do and how you intend to do it.

If you wish to go a short distance (a few miles at most, more likely, not
more than a block or two) then FM would be a dismal choice (I would
take it that you are talking about FM voice...) for several reasons:

- It takes up massive bandwidth. For standard 3 KHz deviation FM voice,
expect to require about 12 KHz or so. You can't do the old idea of "I don't
need 3 KHz deviation... If I deviate only 1 KHz or 500 Hz, then I'll take
a LOT less bandwidth..." If you think this will work, then re-read about
FM...
- If you FM is Ok (i.e. you can live with the wide bandwidth, the very
high noise levels (especially in urban areas...) (Oops... I meant to say
"If for you FM is OK...") then you have to consider the matching network.
A LowFER antenna system is typically a base-loaded tophatted vertical with a
VERY good ground system. As with any heavily-loaded antenna the loading
coil (in this example) is likely to be your primary loss factor. A wire
coil of heavy-guage wire (14 or 12) would work, but Litz wire (remember that?)
such as 12/40 (#12 with strands of #40) will work very well if its geometry
is appropriate (i.e. a basket-weave coil to minimize its distributed capacitance
which would spoil its Q, thereby efficiency...)
So, if you build a half-decent coil (to acheive half-decent power transfer)
then you are talking about very high Q. I ran some SSB on the Lowfer band
for a while and using a coil that wasn't really all that great, I could hear
'sideband cutting' as I tuned through resonance. In fact, I had to retune
if I changed from upper to lower sideband. The point is that an SSB signal
taking only 2.5 KHz or so *is* 'colored' by the tuning network. Imagine
what would happen (response-wise, not to mention phase-wise to an approx.
10 KHz wide FM signal...)

If it is voice communications that you want, there are lots of reasons why
SSB (or even AM...) may be better suited than FM on this band... That's
not saying that it can't be done, but one should keep in mind the contradicting
requirements/realities. There *are* ways to broaden the bandwidth at these
frequencies without killing efficiency (Radio Warsaw, Poland has an LF
transmitter in the 150 KHz range and it has typical european AM/LF broadcast
bandwidth on its transmissions, about 10-12 KHz or so, at least...) but
I'll be darned if I can remember how it was done, or where I saw its
desicription. A good book on all of this is 'VLF Radio Engineering' by Watt.
It was published in the late 60's and it is in most larger libraries...

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

1792. FOLLOWUP/RETRACTION: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 20:23:02 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <306r76$ssu@bronze.lcs.mit.edu>
Source record: 117029
Cross-posted to: sci.electronics.repair,sci.electronics,rec.radio.amateur.homebrew

Thanks to those folks who suggested alternate chemicals and methods to use, but first, an apology: As Henry Spencer and a few others have pointed out, there isn't a conspiracy against individual servicers; my experiences were just due to some unfortunate timing on my and the EPA's part. Henry's quite right that the CFC regulations have affected large companies as well. (To the guy that called me empty-headed, I'm really sorry--I forgot about Halon.)

As Henry says, all CFC solvents are to be eliminated in a few years (1996?), and the existing chemicals are being slowly phased out. The current patchwork regulations of what can be sold to whom is a cause for much confusion and consternation for myself, others, and (I suspect) vendors such as MCM.

I don't care to argue the ozone matter; CFC's are going away, and I'm just trying to find subsitutes that are safe as possible for the ozone *and* myself. I'm not interested in stockpiling; I don't want to store large quantities of *any* chemical in my house.

I'm not necessarily averse to using petroleum-based products; as I mentioned previously, I use acetone (yes, people, I *know* it eats plastic! Voice of experience? Nah! :)) and isopropanol. Both of these are flammable, but I've been using them for awhile and I can (IMHO) control the risks. I'd like that any chemical I buy not have much more risk than the ones I mentioned. (I don't clean with kerosene; why should I bear the fire risk from a like solvent if I don't need to?)

One thing I thought of: Except for compressed air, why do we need aerosol cans at all? I usually use the cans to spray short bursts with an extension tube, or spray into a paper towel, foam swab or Q-tip. I'd be perfectly happy, for my purposes, with a pump-bottle. (I'm not sure this would work for freeze spray, but it's still one less can on my shelf.) If it removed the risk of a flammable propellant, I'd be relieved.

I'd recommend that *anyone* on this group who buys chemicals read the fine print on the can and ask questions, CFCs or not. There's an interesting article in the current issue of ELECTRONIC SERVICING AND TECHNOLOGY that covers this very subject, quite timely. ("Electronic Servicing for Performance and Reduced Environmental Impact", Dr. Mo Tazi, p.20)

...Dave

--
| David Moisan, N1KGH /^_/^\ moisan@silver.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |

| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

1793. INFO. ON ANTIQUE ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 22:27:49 UTC
From: statham_j@ukcsd.reading.sgi.com
Message-ID: <Ct06EE.98C@odin.corp.sgi.com>
Source record: 117033

Some time ago, I became the proud owner of a receiver built in the 1920s (?)
by an uncle of my father. I am told that it was built from a magazine article
and was called The Foreign Listeners Four because at that time it could receive
four foreign stations - from the UK.

It's a fascinating piece of Meccano built on a wooden board and housed in what
I think was once the case of a floor standing wind-up gramaphone. It consists
of four pin triodes with screw terminal bases and is hooked together with square
sectioned, rubber coated wire.

Can anyone give me any information on my fossil ? Or does anyone know a
living fossil who might of heard of it ?

What I'd really like to do is get it going again and to have a copy of the
original magazine article would be fascinating.

Please email me with replies as my access to News is only as reliable as the
next mod I make to the bridge I'm using.

Thanks

John

--

John Statham statham_j@reading.sgi.com
Silicon Graphics
Laser House Tel: (0)61-428-1559
Salford Quays
Manchester
United Kingdom

Yes, perhaps I have lost my mind, but I should have a backup
on tape somewhere.

1794. RS trimmer caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-15 23:18:33 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Ct08qx.oq@news.Hawaii.Edu>
Source record: 117030

Those of you who build homebrew RF stuff know that variable capacitors are scarce. In applications which require one setting of a variable cap upon tuning up then never needs to be touched again I've been using trimmers. In particular, I've been using Radio Shack's mica trimmer, 95-420 pF 100VDC stock # 272-1339. They're in 80M and 30M transmitters I've built. But RS has discontinued to stock this item so I suggest you get what ever is left at your local store; they're on sale for $1.47 each.

Jeff NH6IL

1795. IC Mixers with good Dynamic Range???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-16 00:00:03 UTC
From: paulbreed@aol.com
Message-ID: <3077u3$229@search01.news.aol.com>
Source record: 117031

Does anyone have any personal preferences for HF mixers with good
dynamic range?
Specifically are the very best mixers still discrete, or does someone make
an IC mixer with low enough noise to use in a First Class HF RX with a
preamp?
How good is the dynamic range??
Whats the IP3 point etc...

Thanks in advance!

Paul Breed
KL7JG

PaulBreed@aol.com

1796. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-16 02:13:55 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <Ct0Gv8.2vF@freenet.buffalo.edu>
Source record: 117034

In a previous article, ed@fore.com (Ed Bathgate) says:

>
>Jim N0OCT corrects Ed in his lack of chemistry knowledge.
>
>
>>Ethyl acetate ? sounds like a gasoline additive < ----
>!!!!NOT!!!!
>
>>methyl isobutyl ketone ? Methanol? Iso-butane(cigarette lighter
>fuel)<--NOT!!!!!!
>
>For curiosity, do you know what they are / do?
>
> 73.14
> Ed
>
##
This is not a chemistry newsgroup, but I guess you guys need to get this
out of your systems.

Ethyl acetate is an ester. Has a nice fruity smell and is a good solvent.
It can be made from vodka and vinegar under certain conditions.
Most fruit, flower, perfume, smells are esters.

Methyl isobutyl ketone is ...a ketone. Acetone is also a ketone with a
simpler structure. Ketones don't smell too nice but are powerful
solvents with lots of good uses.

Methanol is, of course, an alcohol. You don't drink it. Comes from pine
trees, but, nowadays most is made from natural gas.

All the above are good solvents and are flammable, but, no more hazardous
than gasoline.

We should all keep in mind what the people at DuPont have been advertising
for years, "Better things for better living through chemistry".

And we should all understand that very, very few things are dangerous until
a fool gets his hands on them; and, when that happens, almost anything
can be dangerous. I read much earlier in this thread where someone
described a flamability test on a solder flux cleaning solvent in which
he sprayed some on a burning cigarette. Would that same chap consider
his friend sane, if said friend went to the local gas station and let
loose with a stream of gasoline on a burning cigarette ?

Enough, OK ?
Kurt, N2TTE
--

1797. Re: RS trimmer caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-16 08:20:21 UTC
From: jdow@BIX.com
Message-ID: <jdow.774346821@BIX.com>
Source record: 117035

jeffrey@kahuna.tmc.edu (Jeffrey Herman) writes:

>Those of you who build homebrew RF stuff know that variable capacitors
>are scarce. In applications which require one setting of a variable
>cap upon tuning up then never needs to be touched again I've been
>using trimmers. In particular, I've been using Radio Shack's mica
>trimmer, 95-420 pF 100VDC stock # 272-1339. They're in 80M and
>30M transmitters I've built. But RS has discontinued to stock
>this item so I suggest you get what ever is left at your local
>store; they're on sale for $1.47 each.

>Jeff NH6IL
Just don't bother to even try to use them at even moderately high frequencies.
(At 6 meters they'd be ill. At 220MHz or above they are death.)

Someone at Rockwell had designed a 20 watt transistor amp for a project we had.
It used mica compression trimmers at 240MHz. It was a bear to tune up and
performed rather poorly. Another engineer removed the compression trimmers
and put in Johansen ceramic slug type trimmers. (Not the little round pills.)
He took out the driver stage and one of the two transistors in the PA. When
tuned up it gave more power output for less power input. I get amazed every
time I open something that is supposed to work at frequencies above 200Mhz
and see such beasties. (I note that the 35 watt PA in the 450MHz Syntor I
have has one. <sigh>)
{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com

1798. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-16 14:36:41 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul16.143641.21737@ke4zv.atl.ga.us>
Source record: 117038

In article <1994Jul15.123344.23544@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>
>: The DX book is worthwhile for the propagation section alone. They're
>: both great resources, buy them both, and the two volume Microwave set
>: as well. While a lot of the circuitry in the project section is based
>: on European components, the wealth of ideas is incredible. I've rarely
>: been disappointed buying a RSGB publication. The quality of writing is
>: also a large cut above the typical ARRL publication.
>
>Yeah, its probably due to the low standards of the people who buy
>our publications. I'm not much of a writer--having never taken a
>single college level writing course, but people constantly ask me to
>write up more of the stuff I've developed. They ought to bug *real*
>writers.

While I agree that the general literacy level in this country is
low, bad writing is not so much the technical innovator's fault
as it is the technical *editor's* fault. It's his job to work with
the author to put the manuscript into a coherent and literate form.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1799. JOHANSON TRIMMERS?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-16 22:23:42 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <Ct20vI.27H@rahul.net>
Source record: 117039

i have been looking for a .3-3.5 pf trimmer that is made by johanson, or was at one time. i can not find any trimmer capacitor that tunes in this range. i need the type where it's a cylinder and it tunes in and out of the metal casing or ceramic what ever it is. if anyone knows where i could find such a beast it would be greatly appreciated.

thanx,
mlyon
--
Mike Lyon <mlyon@rahul.net>

1800. Thanks!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 01:10:50 UTC
From: T230579@UNIVSCVM.CSD.SCAROLINA.EDU
Message-ID: <16FF5129DBS85.T230579@UNIVSCVM.CSD.SCAROLINA.EDU>
Source record: 117040

Just a note to say thanks for the replies to the distributed capacitanse of an air-core solenoid.

You guys really sent some good information!

CYA!

Dan

1801. Avatar Magnetics: Alive and well!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 08:57:02 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul17.005702.1@vax.sonoma.edu>
Source record: 117041

OK folks. Earlier I wrote a post wondering if Avatar Magnetics had gone belly up. Well, as I have found out from the man himself, it is alive and kicking!

Zack Lau was able to give me the gentleman's name and address and I called directory assistance in Indianapolis, IN to get his phone number.

Avatar Magnetics
Ronald C. Williams
240 Tamara Trail
Indianapolis, IN 46217
(317) 783-1211

I felt I at least owed this guy this much after posting he might have gone out of business. 8-)

The power transformer in question is an AV-399 which is 117V. input / 25.4VCT output @ 34 A. and 15V @ 1.5A. It is used in a 30 amp RF proof 13.8V. supply whose plans can be found in the 1986 ARRL Handbook on page 27-3. Price for this puppy delivered in the US is $95.

Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1802. Dummy Load Oil?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 11:45:06 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul17.034506.1@vax.sonoma.edu>
Source record: 117042

What sort of oil is used in the paint can variety of dummy load? I've seen an article that said mineral oil would work pretty well but was prohibitively expensive. While at Wal-mart the other night I checked the prices of their mineral oil. $1.62 per 16oz. bottle. That doesn't seem to be prohibitively expensive to me at about $13 for a full gallon. Am I missing something?

Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1803. Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 11:56:23 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul17.035623.1@vax.sonoma.edu>
Source record: 117043

Could someone point me the right direction to finding information about "rolling my own" power transformer? Seeing as how I don't really have $95 to plunk down for a transformer and I do have a couple of pretty good surplus electronics stores nearby, I was wondering what might be involved with purchasing a hefty transformer on a goofy voltage and "playing". I've seen some big 'uns down at these stores for much, much less than $95 (say $15 - $20) and I'm sure I would have no problem removing their present windings... It would give me that much more "home grown" stuff to brag about. :-)

Thanks in advance--
Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1804. Tempo 2002 HELP!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 14:23:25 UTC
From: Dave Quick <dquick@maroon.tc.umn.edu>
Message-ID: <47446.dquick@maroon.tc.umn.edu>
Source record: 117044
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.homebrew

Help!

I recently purchased a used Tempo (Henry) 2002 2 meter kilowatt amplifier.
(Uses a pair of 8874 tubes in push-pull)

The amp was custom built by Henry to operate on 194 MHz. (It was used in an
MRI lab.) I'd like to move the amp back down to 144 MHz.

I have the only technical manaul available, which covers the 2002, 2006,
and 6N2. It has a schematic diagram of the amp, but does not provide the
dimensions of the tank coil, (a "U" shaped section of 3/4" tubing)
or any diagram or pictorial of the input circuitry.

Because it's not their current model, Henry refuses to service it,
won't sell me parts, or provide any help of any kind.

Does anyone out there have a Tempo 2002, or have experience
servicing one?

Thanks;

Dave Quick WD0EKL

Reply to dquick@maroon.tc.umn.edu
Packet Radio: WD0EKL@WB0GDB.#STP.MN.USA
CompuServe 75526,2656

"My hovercraft is full of eels!"
- John Cleese

1805. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 14:29:08 UTC
From: zlau@arrl.org
Message-ID: <1994Jul17.142908.2163@arrl.org>
Source record: 117048

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:

: While I agree that the general literacy level in this country is
: low, bad writing is not so much the technical innovator's fault
: as it is the technical *editor's* fault. It's his job to work with
: the author to put the manuscript into a coherent and literate form.

But, what if there is *no* technical editor? One of the best places
to find out about the latest innovative projects is conference
proceedings, which don't have the lead times associated with
editing.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1806. Re: Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 17:48:48 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <Ct3ItD.Ct0@freenet.buffalo.edu>
Source record: 117045

In a previous article, harrisok@vax.sonoma.edu () says:

>Could someone point me the right direction to finding information about
>"rolling my own" power transformer? Seeing as how I don't really have $95 to
>plunk down for a transformer and I do have a couple of pretty good surplus
>electronics stores nearby, I was wondering what might be involved with
>purchasing a hefty transformer on a goofy voltage and "playing". I've seen
>some big 'uns down at these stores for much, much less than $95 (say $15 - $20)
>and I'm sure I would have no problem removing their present windings... It
>would give me that much more "home grown" stuff to brag about. :-)
>
>Thanks in advance--
>Ken Harrison
>N6MHG
>email: harrisok@sonoma.edu
>

Ken,
Rolling your own, as you have proposed, was at one time a very common thing
to do. The further back you go in earlier editions of the ARRL handbook, the
more info you will find. Start at about 30 years ago and work backwards.
There have also been several good items in QST on the subject, especially
those by McCoy, W1ICP, in the '50s-'60s.
Good luck, Kurt, N2TTE

--

1807. Re: IC Mixers with good Dynamic Range???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 21:00:13 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <93699@uugate.wa7slg.ampr.org>
Source record: 117046

For my money, I would stick with diode-ring DBM's. You will come out
FAR ahead with something like an SRA-1 or an SBL-1 (Mini-Circuits)
than with something like an NE-602 or an MC1496.

The problem with the active mixer IC's is that they have some gain. On
HF, you end up with monstrous signals at times, usually enough to cause
some of the IC mixers to wilt in their presence.

The mistake made by many people is to put too much gain in front of the
mixers. For example, the NE602 has a fair amount of gain intrinsic to
its gilbert-cell mixer, and an unnecessarily low noise figure to boot.
For good performance, you would want to balance pre-mixer gain and
noise figure appropriately.

When it comes to HF, the noise figure of a single diode-ring mixer (which
can be used to get a system noise figure of 7-9 db) is plenty low to
hear any signal that is there (assuming that your antenna is half-decent.)
on HF. Therefore, right off, it is going to reduce signal-handling
capability and NOT improve receiver sensitivity if you were to put a preamp
in front of it. You'd just hear the atmospheric noise louder if you
did put one inline. An exception to this might be if you were using
a minimal antenna (mobile whip, etc.) where the signals are diminished
by the nature of your antenna.

Of course, DBM's are not quite as easy to use as some of the IC's. You
need to pay attention to matching at all 3 ports. The converted
signal out of the IC is usually a higher level (it will be 6 or so db lower
than the original RF going in...)

There is an excellent receiver design in the 1981 Radio Amateur's Handbook
(I *think* that that was the year... Its red, anyway) - actually its
a tiny transciever (Direct Conversion) but it shows some techniques
for using DBM's.

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

1808. Scanner listserv info request

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 21:44:32 UTC
From: zikot@freenet.scri.fsu.EDU
Message-ID: <199407172144.AA16792@freenet2.scri.fsu.edu>
Source record: 117047

Does anyoune have any information for a "Listserv" for Vhf and Uhf scanning or Shortwave. Also, is there anyway to get to the "Rhime, Rhyme?" network via InterNet?? TNX es Best of 73's from Madeira Beach, FL.

--
Tom Ziko KA5EYY
Zikot@freenet.scri.fsu.edu

1809. Re: RS trimmer caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-17 22:17:05 UTC
From: zlau@arrl.org
Message-ID: <1994Jul17.221705.9220@arrl.org>
Source record: 117055

jdow on BIX (jdow@BIX.com) wrote:

: Someone at Rockwell had designed a 20 watt transistor amp for a project we had.
: It used mica compression trimmers at 240MHz. It was a bear to tune up and
: performed rather poorly. Another engineer removed the compression trimmers
: and put in Johansen ceramic slug type trimmers. (Not the little round pills.)
: He took out the driver stage and one of the two transistors in the PA. When
: tuned up it gave more power output for less power input. I get amazed every
: time I open something that is supposed to work at frequencies above 200Mhz
: and see such beasties. (I note that the 35 watt PA in the 450MHz Syntor I
: have has one. <sigh>)

I've had good luck using high quality porcelain chip capacitors in
parallel with air variable trimmers, at least at lower frequencies.

However, be careful when modifying such circuits. Sometimes the
high loss is needed for stability--though you might be able to
add a resistor to restore maintain stability.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1810. J-Pole Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 02:56:28 UTC
From: jls@northshore.ecosoft.com
Message-ID: <30cr0s$2an@northshore.ecosoft.com>
Source record: 117049

Looking for information on building a J-pole antenna to cover the 80-10m bands. Recently bought a Kenwood TS-430, and want to try my hand at antenna making. Also any other suggestions for a vertical type antenna that can be made relatively easily/inexpensively. Very limited on space, so anything other than vertical is out.

Thanks,
Jeff Stutzman (N1LUY)

1811. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 03:46:53 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <30ctvd$cf3@hobbes.cc.uga.edu>
Source record: 117050

In article <1994Jul17.142908.2163@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>
>: While I agree that the general literacy level in this country is
>: low, bad writing is not so much the technical innovator's fault
>: as it is the technical *editor's* fault. It's his job to work with
>: the author to put the manuscript into a coherent and literate form.
>
>But, what if there is *no* technical editor? One of the best places
>to find out about the latest innovative projects is conference
>proceedings, which don't have the lead times associated with
>editing.

In my more curmudgeonly moments I find it hard to believe people can
think clearly if they can't write clearly. I see writing as simply
an extension of the art of thinking. Just as you might not trust an
architect to design a house if he had trouble drawing his designs
on paper.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1812. Re: How to design a button cell holder : suggestions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 04:58:54 UTC
From: jon_sree@world.std.com
Message-ID: <JON_SREE.94Jul17235854@world.std.com>
Source record: 117051

In article <1994Jul14.093554.106@drager.com> landisj@drager.com (Joe Landis - System & Network Mgr) writes:

> ________
> \/ |
> cell ---------- | brass contact strip
> ___________| |____|______ pcb surface
> |________|
>
> similar brass contact on other side also
>
> Where can I find such a brass strip ? This method of contacting is the

Ideally you'd want to use a phoshor bronze strip. This is the stuff that they make finger stock out of. Has good memory - will retain tension to the contact. Also very conductive. You may be able to cut up a piece of finger stock to use the individual "fingers" for contacts. Or try a scrapyard. Brass has no "memory". You put the battery in and the clip will open, and will stay open. The battery will fall out.
Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WB3JOE.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

Joe,

I thought I'd found a solution because over the weekend, I found brass shim stock made by K & S Engineering Company at a local hobby store, Eric Fuchs in the Burlington Mall. But your point is valid about the springiness of brass.

But ... what is finger stock ? What kind of stores carry it ?

Thanks,

/ Jon Sreekanth

Assabet Valley Microsystems, Inc. | Fax and PC products
5 Walden St #3, Cambridge, MA 02140 | (617) 876-8019
jon_sree@world.std.com |

1813. Building an HW-9: HALP!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 06:21:08 UTC
From: cummings@u.washington.edu
Message-ID: <30d70k$34a@news.u.washington.edu>
Source record: 117054

That's right, I'm building a Heathkit HW-9 QRP rig. I bought it about 7 years ago, and I thought it had been lost before I got around to building it. Well, it was found, and I'm working on it, but about half the parts from "package 2" (the non-taped parts) are missing. Anyone think there's any way to find these parts, short of buying new replacements, one-by one? If so, any ideas about the best place to find these parts?

Also, I keeo hearing mention of either a QRP mailing list or newsgroup; Could someone direct me there? Thanks!

--
Mike Cummings NX7E cummings@u.washington.edu
"Like jewels in a crown, the precious stones glittered in the Queen's round metal hat." - Jack Handey

1814. Re: Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 06:29:02 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul17.222902.1@vax.sonoma.edu>
Source record: 117052

In article <Ct3ItD.Ct0@freenet.buffalo.edu>, aa450@freenet.buffalo.edu (Kurt Rieder) writes:
> Ken,
> Rolling your own, as you have proposed, was at one time a very common thing
> to do. The further back you go in earlier editions of the ARRL handbook, the
> more info you will find. Start at about 30 years ago and work backwards.
> There have also been several good items in QST on the subject, especially
> those by McCoy, W1ICP, in the '50s-'60s.
> Good luck, Kurt, N2TTE

OK. Thanks Kurt. I have a '66 (I think) and a '68 handbook somewhere around here in a box. I have this feeling that I'm going to have to be looking up a local old timer with a well stocked library, though... :) Thank you sir.

1815. Re: J-Pole Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 06:36:04 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul17.223604.1@vax.sonoma.edu>
Source record: 117053

In article <30cr0s$2an@northshore.ecosoft.com>, jls@northshore.ecosoft.com (Jeffery L. Stutzman) writes:
>
> Looking for information on building a J-pole antenna to cover the 80-10m
> bands. Recently bought a Kenwood TS-430, and want to try my hand at antenna
> making. Also any other suggestions for a vertical type antenna that can
> be made relatively easily/inexpensively. Very limited on space, so anything
> other than vertical is out.

Wow, that would be one TALL antenna on 80m, huh?! I'm working on collecting the parts and such for a 1/2 size G5RV to put up over my house. I have all but the pieces to anchor the ends and I have about $9 invested so far. ;-)

73,
Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1816. QRP Mail List (was: Building an HW-9: HALP!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 08:53:22 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Ct4ooz.HxI@news.Hawaii.Edu>
Source record: 117056

In article <30d70k$34a@news.u.washington.edu> cummings@u.washington.edu (Mike Cummings) writes:
>
>Also, I keeo hearing mention of either a QRP mailing list or newsgroup;
>Could someone direct me there? Thanks!

The QRP email list is a wonderful forum. To subscribe send an email to:
majordomo@think.com
and only write:
subscribe qrp
or:
subscribe qrp-digest
and within a few minutes you'll receive an email from think.com
welcoming you to the net. Note that the digest will consist of
all the day's articles sent in bulk; otherwise you'll receive
each article as a seperate email. Expect about 20 articles
per day. There's some famous folks on the list - plenty of
help available for any problem you might have regarding:
antennas, homebrew, kits, and any other qrp-related items.

.73,
Jeff NH6IL

1817. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 13:49:29 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul18.134929.10526@ke4zv.atl.ga.us>
Source record: 117060

In article <1994Jul17.142908.2163@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>
>: While I agree that the general literacy level in this country is
>: low, bad writing is not so much the technical innovator's fault
>: as it is the technical *editor's* fault. It's his job to work with
>: the author to put the manuscript into a coherent and literate form.
>
>But, what if there is *no* technical editor? One of the best places
>to find out about the latest innovative projects is conference
>proceedings, which don't have the lead times associated with
>editing.

Then we suffer through the bad writing. That's a different thing
than the Handbooks we were discussing where there *is* an editor
responsible for the book.

Note I'm not trying to slam ARRL book editors here. It's a thankless
enough job already. I suspect that the ARRL editors are no less
skilled than their RSGB counterparts, but the raw material they
have to work with may be less polished.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1818. Re: J-Pole Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 14:26:58 UTC
From: wyn@ornl.gov
Message-ID: <wyn.53.2E2A9132@ornl.gov>
Source record: 117058

In article <30cr0s$2an@northshore.ecosoft.com> jls@northshore.ecosoft.com (Jeffery L. Stutzman) writes:

> Looking for information on building a J-pole antenna to cover the 80-10m
>bands. Recently bought a Kenwood TS-430, and want to try my hand at antenna
>making. Also any other suggestions for a vertical type antenna that can
>be made relatively easily/inexpensively. Very limited on space, so anything
>other than vertical is out.

>Thanks,
> Jeff Stutzman (N1LUY)

Jeff,
The classic J-pole design is a monobander. Most trapped multiband verticals, I have had experience with work slightly better than a Cantenna (dummy load). Most monoband verticals (full 1/4 wave or longer) verticals with lots of ground radials (more than 20) have worked well for me. I have not tried the Cushcraft R5 or R7 but these seem to get mixed reviews (rec.radio.amateur.antennas).

Unfortunately this probably does not solve your limited space problem. Have you considered a short G5RV or an inverted vee fed with open wire (450 ohm) ladder line and a balanced line tuner?

73,
C. C. (Clay) Wynn N4AOX
wyn@ornl.gov

==========
= Cooperation requires participation. Competition teaches cooperation. =
==========
...._ .. ..._ ._ _ . ._.. . __. ._. ._ .__. .... _.__

1819. RE: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 15:00:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E2A99C0@msmail.uthscsa.edu>
Source record: 117057

In digest 199, Ken (N6MHG) writes:

>What sort of oil is used in the paint can variety of dummy load? I've seen
an
>article that said mineral oil would work pretty well but was prohibitively
>expensive. While at Wal-mart the other night I checked the prices of their
>mineral oil. $1.62 per 16oz. bottle. That doesn't seem to be
prohibitively
>expensive to me at about $13 for a full gallon. Am I missing something?
>
>Ken Harrison
>N6MHG
>email: harrisok@sonoma.edu

Yes, mineral oil is a little expensive and is probably the
safest to use in a dummy load. Don't try anything like motor
oil, it has many different types of lubricants that have
different volatility. The 'best' type of oil is "turbine oil."
You can get it at many farm and ranch supply stores. One of the
easiest to find is sold by TEXACO distributors, Regal Oil R&O Number
46. You can usually find it in 5 gallon cans sold as "turbine oil."
I don't know how easy it will be for you to find where you are. Just
go out to one of the small towns in your area.

1820. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 16:16:28 UTC
From: rapw20@email.sps.mot.com
Message-ID: <1994Jul18.161628.1230@newsgate.sps.mot.com>
Source record: 117065

I used mineral oil in mine. I got it at K-Mart at about $1/pint. The check-out person gave me a funny look when I bought 8 bottles. Then I realized what it's often used for (constipation:-).

Be aware that you have to de-rate the dummy load if you use drug-store mineral oil. The transformer oil (be sure it's non-PCB) or the Texaco Turbine Oil is a better choice if you're going to run a lot of power into the dummy load. The Heath Cantenna has different rating curves for the different types of oil. For your basic 100W transceiver, the K-Mart stuff is fine but for tuning your kW linear, get the other stuff.

73... Mark AA7TA

1821. Re: JOHANSON TRIMMERS?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 16:28:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <18JUL199411281965@pavo.concordia.ca>
Source record: 117059

In article <Ct20vI.27H@rahul.net>, Mike Lyon <mlyon@rahul.net> writes...
>i have been looking for a .3-3.5 pf trimmer that is made by johanson, or
>was at one time. i can not find any trimmer capacitor that tunes in this
>range. i need the type where it's a cylinder and it tunes in and out of
>the metal casing or ceramic what ever it is. if anyone knows where i
>could find such a beast it would be greatly appreciated.

That would be a type 5800 Johanson cap. They are available from Electrosonic in Toronto, Canada. BUT...(there is ALWAYS a but) Their latest catalog lists them at $16.34 for 1-24 quantity. Thats roughly $11.60 in Yankee dollars. If you can stomach that kind of price tag, their number is (416) 494-1555, ask for the order desk. BTW the price has almost certainly risen slightly :-)

Good luck,

Mark

1822. Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 16:34:13 UTC
From: pete@wybbs.mi.org
Message-ID: <Ct5A12.3x7@wybbs.mi.org>
Source record: 117131

I am building a 1.5 story house, with a walkout basement, starting
next month. Anyone have any good ideas regarding building a new
house and amateur radio?

So far I've thought up of the following, and would appreciate
anyone's comments:

Grounding Rod: Punched in before basement cement is poured.
Should it be isolated from the basement floor?
(soil is sand, high water table (South west shorline michigan)

Antennas in roof:
Can you lay a antenna on the roof, before laying down shingles, or
underlayment, or whatever? Would you have to limit your RF output?
I'll have vaulted ceilings, so there's no real attic.

Cable runs: As the walls go up, what cable runs should I make up
them? The shack will be in the basement, and I'd like to run
a nice piece of coax up, with a remote antenna switch.
--
-=-
Pete Hoffswell |N9SSA |Internet: pete@wybbs.mi.org
Holland, Michigan |616-395-5551 | Packet: n9ssa@wa8ure.#swmi.mi.usa.na
-=-

1823. reply to N6MHG

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 18:32:25 UTC
From: mack@mails.imed.COM
Message-ID: <9406187745.AA774559945@mails.imed.com>
Source record: 117063

Ken:
On rewinding power transformers: You might look seriously at some of the power toroids for ease of rewinding. I have never tried it but at the local surplus place they usually have several varieties of power toroids. If the secondary is on top of the primary it should be fairly easy to get to the secondaries to rewind them. The other advantage (as these are usually high voltage secondaries) is that you can rewind them with much larger wire with a more manageable number of turns. The biggest problem will probably be getting the old secondary off.

Ray
WD5IFS
mack@mails.imed.com

1824. reply to several

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 18:37:30 UTC
From: mack@mails.imed.COM
Message-ID: <9406187745.AA774560250@mails.imed.com>
Source record: 117061

To N6MHG:

Ken:
I am using wal-mart mineral oil in my Heath dummy load. So far it is still 50 ohms and still dissipating energy!

To The chemical thread:

Iso-butane is butane that is "twisted" . It is different from regular butane only in its physical structure. You should be aware that the propellant in a lot of aerosols these days is butane! I believe that this is true for hair spray. That is one reason it burns so well (in addition to the laquer in it).

To Joe Landis:

Why not just remove the preformed contacts from coin cell sockets and modify them for your use. The pressure exerting surface is already what you need!

Ray
WD5IFS
mack@mails.imed.com

1825. Kenwood TR2500 mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 18:42:42 UTC
From: mack@mails.imed.COM
Message-ID: <9406187745.AA774560562@mails.imed.com>
Source record: 117062

Does anyone have a manual for a Kenwood TR2500 2meter FM rig?

This is an old rig that was set up for 15KHz channels. I have
modified it for 10 Khz spacing with a new crystal, but it needs new
programming for the PLL. Unfortunately, when my new (then) wife and I
cleaned up the shack we must have thrown out the repair manual I had
for it, so I dont know what the pin outs are on the PLL board.

Thanks in advance

Ray
WD5IFS
mack@mails.imed.com

1826. Re: Rolling my own Transformer (LONG)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 19:05:29 UTC
From: sia@access3.digex.net
Message-ID: <30ejpp$gj4@access3.digex.net>
Source record: 117064

>Could someone point me the right direction to finding information about
>"rolling my own" power transformer? Seeing as how I don't really have $95 to
>plunk down for a transformer and I do have a couple of pretty good surplus
>electronics stores nearby, I was wondering what might be involved with
>purchasing a hefty transformer on a goofy voltage and "playing". I've seen
>some big 'uns down at these stores for much, much less than $95 (say $15 - $20)
>and I'm sure I would have no problem removing their present windings... It
>would give me that much more "home grown" stuff to brag about. :-)
>
>Thanks in advance--
>Ken Harrison
>N6MHG
>email: harrisok@sonoma.edu
>

I have modified transformers at times with good results. Maybe some
knowledgeable person can shed more light on the subject. The following
relates my experience only. Your mileage may vary 8). All disclaimers
apply. I am assuming you have related knowledge and feel competent
doing something like that...

Assumptions:
0) You are not trying to put together a transformer from scratch!
The most difficult part of doing is finding out about the core material
(magnetic properties) which seems impossible to find for an old
transformer.

1) What you intend to modify, is an ordinary non-saturating core xformer
with its primary being fed from an AC outlet (110 and/or 220 volt
household supply), and you don't intend to mess with the primary.

2) It is not an "autotransformer" - i.e., its primary winding(s) are
separate from its secondary winding(s), there is no electrical
connection between the two.

3) The intent is to vary the secondary voltage *somewhat*, for example ,
you are not trying to have a 40 volt secondary put out 800 volts.
(not only that may be physically impossible for a given geometry,
it may have repercussions regarding breakdown voltages, heat
dissipation and such.)

4) You *know* the power rating of the transformer's secondary (BTW, I'm
theoretically not inclined, or challenged depending on how you look at it.)
You know for example that the secondary supplies say 12 volts at 2.5
amps max. (AC, RMS, given Frequency, pure sinusoid, constant phase,
etc. etc.)

Opening up a transformer is best left as an exercise for the reader!
If it is dipped in tar(!?), I'd say forget it.
Don't scratch or bend the strips. They are laminated for a reason.
If you pry them off carelessly and damage the lamination/coating or bend them,
you are likely to affect the power handling, cause the core to heat up more
than it is supposed to, and/or make the xformer "buzz". A
practice run on a small low-power transformer maybe worthwhile.

The basic idea is to get what is called "turns per volt" for the secondary
(# of turns that give 1 volt at the secondary.) The reverse (i.e., voltage
per single turn) will also work but I think is less accurate unless you're
in a lab environment.)
It may involve some guessing initially, and the more experience you
have, the better your guess will be. Try to estimate, by looking at the
secondary winding how many turns it has.
A rough guess is fine. Divide that by the secondary's voltage.
Then wrap *neatly* the number of turns that you calculate, to produce say
a couple of volts or so. Another method that's more accurate, is
to unwind (a) secondary completely, and count the number of turns,
and then do the division. I am almost sure there are some nonlinearities
in practice, but for the most part, the relationship is linear and
gives a good approximation. If you wrap n turns, you get m volts.

Using the information, you can wrap your experimental winding, preferably
for a few volts. Write down your exact # of turns. Then put back the whole
thing (carefully). All of the strips should be put back. And the whole
thing should be neat and tidy. I have used electrical tape to hold the
temporary secondary (experimental) winding. If you left the original
secondary winding in place, your experimental secondary could
be wrapped on top of it (space permitting). Then connect the primary and
measure with a good voltmeter, the voltage of your experimental winding.
A high valued resistor as a load on the secondary to draw a few milliamps may
be good idea too. Get a second estimate of the turns per volt by dividing
the # of turns by voltage. Then, calculate the number of turns you need to wrap
for your new secondary (# turns= turns per volt value * desired voltage.)
Keep in mind the space limitations for winding extra wire if that's what's
needed. Open up the thing again, remove the experimental winding.

If you intend to increase the voltage, you must derate the current the
secondary can supply. Moving too much above or below what the transformer
was designed for is in my opinion not a good idea, and it's kind of hard
to tell what those limits are when no data is available. Another concern
is the space you have for re-wrapping the wire. The most important
thing, however, is to keep the power rating of the xformer the same. Example:

Originally: secondary 10 volts, with max current 2.5 amps.
New desired secondary voltage: 17 volts.
P orig = 10 * 2.5 (RMS values) = 25 watts.
(or maybe we should talk about Volt-Amperes instead of watts -:) -:))
New max secondary current = 25 / 17 = about 1.4 amps.
So at 17 volts you should not expect to draw more than about 1.4 amps.

[This space is left for theoretical gurus. Please go ahead.]

The estimated max current gives you an idea of the wire gauge you need.
Use fresh wire of a diameter that can handle the current you need the
secondary to supply. Look at tables (for example in the arrl handbook) that
show the values for various gauges of copper wire, and be as conservative
as possible (i.e., use larger diameter wire - if there is enough space for
the whole winding).

footnote: There is an iterative process here if you want to determine the
limits, because you can increase the voltage (when not demanding high
current) and use thinner wire and that in turn may buy more winding space.)
The inverse is also true. (Sometimes there are tables that can be used to
estimate how many strands of wire of a given gauge can be put side-by-side in
a given cross-sectional area.)

Of course if you intend to lower the voltage, your max current capacity goes
up, and if that's what you want, you need larger gauge wire. There is a
limit as to how much current can be drawn with a given xformer before
saturating the core material, overheating and the associated anomalies.
Deviating with a few percent of the rating may be ok.

Wrap the winding tight and with care, so as *not to nick the lamination of
the wire*. Put Q-dope or use a good quality insulating varnish over each
layer. For higher voltages, it is essential to use a varnish with high
dielectric properties (high breakdown voltage) or else one layer may arc
over to another. You may even have to have "varnished paper" insulation
between layers. Put back the final wrapping insulating "papers", etc.
BTW: can someone point to a source of that paper/wrapping material ?

After a couple of times, you can skip the trial winding too.
I usually wrap a few more turns, put the thing together, measure the voltage,
and trim as necessary before finishing up.

All comments and corrections welcome - I don't rewind transformers that often!!!

** Be careful and use applicable precautions and good judgment when around
lethal voltages (or should I say currents,... or power -:)) **

Good Luck,

/siamack

--
Siamack Navabpour sia@access.digex.net
73 de wj1q

"He who bends to himself a joy, Will the winged life destroy
But he who kisses the joy as it flies, Will live in eternity's sunrise"
-- Willy Shakespeare

1827. RE: a High Dymnic range Mixer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-18 22:28:05 UTC
From: paulbreed@aol.com
Message-ID: <30evll$1fm@search01.news.aol.com>
Source record: 117066

In my origional post I said I wanted any information of IC mixers
that would be good for use on the HF bands with a preamp.
(That was I stupid request!!!! On the HF bands Dynamic range is more
important
than noise figure!!!! so no preamp.)
That was a typeo I ment with out a preamp. Like the block diagram in the
QST recieveier article.

Has anyone used the new mixer from analog devices?
It has a SSB noise figure of 20dB and a dynamic range of 100+ dB
Is this noise figure of 20dB Good enough for 10 and 15M?

Also how do you convert from or between noise figures specified as:
SSB dB
nv/Root Hz
and Temperature???

Thanks in advance
Paul Breed KL7JG

1828. Re Johanson caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 02:00:05 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Jul18.220005.4106@wb3ffv.wb3ffv.ampr.org>
Source record: 117124

Try the hamfests. I live in the Washington DC/Baltimore metro area, with many hamfests throughout the year and the larger ones usually have at least one dealer who sells them. The going price is usually in the $2 range, and they usually have large bins of them, apparently in unused condition. Hint--check the dealers who traffic in used microwave goodies; they would probably be the most likely ones to have them. (For the last two or so years now, there has also been one rather large surplus dealer at the local hamfests who sells SBL-1 DBMs by Mini Circuits Labs at 2 for $5; most are unused, some are unsoldered, all have tested good. I'm not at liberty to say how many I bought since my wife might see a printout of this, but we'll just leave it at "dozens"!) 73 de WA8MCQ

1829. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 07:48:57 UTC
From: briane@iaccess.za
Message-ID: <30g0h9$qcf@goofy.iaccess.za>
Source record: 117067

In article <2E2A99C0@msmail.uthscsa.edu>, Muenzler, Kevin wrote:
> Yes, mineral oil is a little expensive and is probably the
> safest to use in a dummy load. Don't try anything like motor
> oil, it has many different types of lubricants that have
> different volatility. The 'best' type of oil is "turbine oil."
> You can get it at many farm and ranch supply stores. One of the
> easiest to find is sold by TEXACO distributors, Regal Oil R&O Number
> 46. You can usually find it in 5 gallon cans sold as "turbine oil."
> I don't know how easy it will be for you to find where you are. Just
> go out to one of the small towns in your area.

My experience with dummy loads has shown that the cheapest and most
efficient oil to to use is Transformer oil. This is the oil used in
distribution transformers, as used by your power utility companies in the
USA. This is the same oil that we use in our oil-cooled welders here in
South Africa. I am sure you must have the same critter over there!

The oil in the dummy load is ostensibly used for cooling/heat dissapation,
and this what the oil in transformers and welders is there for.

Hope this info is useful to someone!!

Cheerio,

Brian ZR5DTS Voice: ++27-31-7011201 (06:00-14:30 UTC)
Internet: briane@iaccess.za Fax: ++27-31-7090813
VHF Packet: ZR5DTS@ZR5GQ.NTL.ZAF ICBM's: 29:51:05 S 30:53:59 E
****
I am glad I don't know everything, that way life isn't boring - Brian Ellse 94
****

1830. Re: a High Dymnic range Mixer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 08:45:49 UTC
From: jdow@BIX.com
Message-ID: <jdow.774607549@BIX.com>
Source record: 117118

paulbreed@aol.com (PaulBreed) writes:

>In my origional post I said I wanted any information of IC mixers
>that would be good for use on the HF bands with a preamp.
>(That was I stupid request!!!! On the HF bands Dynamic range is more
>important
>than noise figure!!!! so no preamp.)
>That was a typeo I ment with out a preamp. Like the block diagram in the
>QST recieveier article.

>Has anyone used the new mixer from analog devices?
>It has a SSB noise figure of 20dB and a dynamic range of 100+ dB
>Is this noise figure of 20dB Good enough for 10 and 15M?

>Also how do you convert from or between noise figures specified as:
>SSB dB
>nv/Root Hz
>and Temperature???

>Thanks in advance
>Paul Breed KL7JG

SSB dB is nonsense salesjargon, IMHO.

nv/Root Hz and temperature are related by the Boltzmann equation.
Essentially noise power = kTB, which at room temperture is about -173.85dBm/Hz.
Once you have that value you can calculate all the other values you want by
playing with absolute temperature ratios and things like power = E^2/R
relations.

The noise temperature of a receiver is related to how much noise you get out
of the receiver with a standard "physics class" noiseless source the same
impedance as it usually connected. The noise figure is related to the sum
of the source resistor noise plus the excess receiver noise divided by
the source resistor noise. A noiseless receiver has a VERY low noise
temperature and a noise figure very close to unity.
So lemme see here.... 10^-20.385 (to make it watts) ~= 4*10^-21 = E^2/50.
This means E^2 = 50*4*10^-21 = 2*10^-19 volts squared. Thus a bare room temp
50 ohm resistor generates about .4nV/Root Hz noise. In a 2400Hz SSB bandwidth
this means about .022uV of noise in a 0dB noise figure receiver. In a 3dB NF
receiver that'd be maybe .031uV of noise. For all the good that will do.
(I suppose it means you can place a 50 ohm signal generator witl attenuators
on the receiver input and enjoy a 20dB SNR on a CW signal in the SSB passband
with a 0.3uV signal. All of which is meaningless for SSB usage and also
meaningless for normal usages on HF. For HF usage with dipoles or gain antennas
you want a frequency sensitive attenuator in front of the receiver with

perhaps the 3dB corner at 30MHz and attenuation rising about 6dB per octave as the frequency goes down. And even THAT may be underkill in most urban locations. That attenuator will do WONDERS for practical IMD performance on any receiver, by the way.)

{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com

1831. Re: Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 10:16:35 UTC
From: randolph@est.enet.dec.com
Message-ID: <30gohm$39p@mrnews.mro.dec.com>
Source record: 117121

In article <1994Jul17.035623.1@vax.sonoma.edu>, harrisok@vax.sonoma.edu writes...
>Could someone point me the right direction to finding information about
>"rolling my own" power transformer?

If you have a lot of time on your hands, go for it. I found a junk transformer at a flea market and decided to try to re-wind it for my own needs. I'm still working on it...

First problem is getting it apart. Mine was potted (soaked in varnish), so just unwinding the windings was out. I had to disassemble the core by unbolting it and tapping a knife blade in between the laminations, one at a time.

Next, start unwinding. Mine had several windings of various voltages, all about 1 amp output. The potted wire gets trashed by the unwinding process, so plan to buy new wire - Amidon has large gauge "enameled" wire. You count turns as you unwind. You will, of course, have measured each winding for it's output voltage before you started any of this. From the number of turns you get volts/turn for the transformer.

If you're lucky, your transformer will have the primary winding at the inside, so you're all set once you get the secondary off. Figure out how many turns you want, and start in. This is where I left off - you have to anchor the windings somehow or they'll start to turn into a tangled mess once you get going. I didn't realize that, so now I'll probably have to unwind it and re-do it. You wind in layers, seperating each layer with a wrapping of tape or waxed paper. You don't really want the layers to be in direct contact, to avoid any possibility of shorts. The tangled mess mentioned above puts them in direct contact... Anyway, mine will be 21V at 10A eventually.

All of this is really easy to do, just rather tedious. Beats $95 transformers.

See the ARRL Handbook for information on: transformer size, wire gauge choice, power supply design factors, etc.

-Tom R. N1OOQ randolph@est.enet.dec.com

1832. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 11:24:59 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Jul19.052459.1@ccsvax.sfasu.edu>
Source record: 117119

In article <1994Jul17.142908.2163@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP)) writes:
> Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>
> : While I agree that the general literacy level in this country is
> : low, bad writing is not so much the technical innovator's fault
> : as it is the technical *editor's* fault. It's his job to work with
> : the author to put the manuscript into a coherent and literate form.
>
> But, what if there is *no* technical editor? One of the best places
> to find out about the latest innovative projects is conference
> proceedings, which don't have the lead times associated with
> editing.
> --
> Zack Lau KH6CP/1 2 way QRP WAS
> 8 States on 10 GHz
> Internet: zlau@arrl.org 10 grids on 2304 MHz

Can I butt in? This topic is very interesting to me, because I'm a research scientist (psychology) as well as a textbook author, so I get to practice two different kinds of writing.

Scientific writing, as we practice it in our journals, and as is found in most conference proceedings, has as its objectives clarity, completeness, and objectivity. As everyone knows, it tends to run to long, complex sentences, passive voice, depersonalized construction, etc. Much of what I read in QST, and many of our most popular books, like those by Doug DeMaw and Wes Hayward, are written is some version or other of "science-ese." The disadvantages of this kind of writing are that it is "flaccid," "lacks energy," and is just plain dull.

Good textbook writing is, in my opinion, harder. In addition to trying to be clear and complete, you also have to be interesting. That means, among other things, a lot of variation in sentence length, and a strong preference for the active voice. It is so EASY to write, "In this study, the children were presented with xyz stimuli, then required to do abc in response." It is so much less natural for a scientist, but so much more engaging, to write, "In this study, the children saw xyz, and responded with abc."

I guess it's true that a good editor could convert the one to the other, but I can tell you for sure, mine doesn't have time to do so. We talk from time to time about rhetorical strategies, but getting it right is on my nose, not his.

If I had to recommend one short book that has taught me more about writing than anything else I've ever read, it would be, Strunk and White's _Elements of Style_. (That's E.B. White, of _Charlotte's Web_ fame.)

73!
--
If RST>519 Jim Speer, K5YUT
Then cut_power; f_speerjr@ccsvax.sfasu.edu

1833. Re: Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 13:06:16 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <Ct6v2H.4Ap@hpqmoea.sqf.hp.com>
Source record: 117120

It's much easier than you might think.

Find a scrap toroidal transformer with the primary voltages and overall power rating you want.

Usually the secondary windings are on top and can be carefully unwound without disturbing the high voltage winding or its safety insulation. If you measured the secondary voltage and counted its turns, you will know the recipe for creating your new secondary.

If you want two separate, identical secondaries, wind them together with doubled wire to get matched wire lengths and so matched resistances.

No messing with laminations, no problems restacking. A bit fiddly to wind, though.

Score A++ for amateur spirit!

David GM4ZNX

1834. reply to noise temp to NF conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 16:55:05 UTC
From: mack@mails.imed.COM
Message-ID: <9406197746.AA774640505@mails.imed.com>
Source record: 117122

To Paul Breed:

The conversion from NF to temperature and vice vesa is on page 12-2
of 1988 and 1985 ARRL handbook (and presumably newer versions):

Te = 290[antilog(NF/10)] in degrees Kelvin

NF = 10 log(1+(Te/290)) where Te is degrees Kelvin

1835. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 17:06:28 UTC
From: tomb@lsid.hp.com
Message-ID: <Ct766s.3w3@hpcvsnz.cv.hp.com>
Source record: 117123

Muenzler, Kevin (MUENZLERK@uthscsa.EDU) wrote:
: In digest 199, Ken (N6MHG) writes:
: >What sort of oil is used in the paint can variety of dummy load? I've seen
: an
: >article that said mineral oil would work pretty well but was prohibitively
: >expensive. While at Wal-mart the other night I checked the prices of their
: >mineral oil. $1.62 per 16oz. bottle. That doesn't seem to be
: prohibitively
: >expensive to me at about $13 for a full gallon. Am I missing something?

: Yes, mineral oil is a little expensive and is probably the
: safest to use in a dummy load. Don't try anything like motor
: oil, it has many different types of lubricants that have
: different volatility. The 'best' type of oil is "turbine oil."
: You can get it at many farm and ranch supply stores. One of the
: easiest to find is sold by TEXACO distributors, Regal Oil R&O Number
: 46. You can usually find it in 5 gallon cans sold as "turbine oil."
: I don't know how easy it will be for you to find where you are. Just
: go out to one of the small towns in your area.

Transformer oil is pretty much designed for service like this. Many
transformer rebuild shops will fill up your pail for you for a nominal
charge, and there are transformer rebuild shops in most cities.

73, K7ITM

1836. ISD2590 chip - where to get one

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-19 19:36:06 UTC
From: brian@nothing.ucsd.edu
Message-ID: <30h9v6$ib0@network.ucsd.edu>
Source record: 117125

The ISD2590 chip from Information Storage Devices is a nifty little chip for a project I'm working on, but I can't seem to find one.

JAMECO lists it in their catalog, and accepted an order for one, but then advised that it would not ship for SIX MONTHS and cancelled the order. None of the other low-volume part vendors seem to have it available.

Anyone know of any sources for this chip? It'll probably be around $40. I only need one.
- Brian

1837. VHF/UHF Coax switches

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 00:47:53 UTC
From: beau@enterprise.america.com
Message-ID: <30hs7p$o8l@enterprise.america.com>
Source record: 117126

I am looking for 6 VHF/UHF coax relays(not switches..sorry)

1838. Re: Dummy Load Oil?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 03:27:56 UTC
From: esj@harvee.billerica.ma.us
Message-ID: <H.eg.8cMnTIL5gT_@harvee.billerica.ma.us>
Source record: 117136

In <1994Jul17.034506.1@vax.sonoma.edu>, harrisok@vax.sonoma.edu writes:
>What sort of oil is used in the paint can variety of dummy load? I've seen an
>article that said mineral oil would work pretty well but was prohibitively
>expensive. While at Wal-mart the other night I checked the prices of their
>mineral oil. $1.62 per 16oz. bottle. That doesn't seem to be prohibitively
>expensive to me at about $13 for a full gallon. Am I missing something?

only the looks you get when you walk up to the counter carrying a gallon
of mineral oil...

A: well, at least it won't overheat now.

A: but the instructions told me to!

A: my S.O. won't let me use transformer oil.

A: hey, it's only a hobby.

--- eric (its for a friend...)
--
HOME: esj@harvee.billerica.ma.us HAM ka1eec
WORK: esj@temerity.polaroid.com 617.386.4687
source of the public's fear of the unknown since 1956

1839. VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 05:42:08 UTC
From: sbertsch@magnus.acs.ohio-state.edu
Message-ID: <30idfg$iks@charm.magnus.acs.ohio-state.edu>
Source record: 117129
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Can someone point me to any construction articles on VHF SWR meters? It doesn't have to be fancy, or even provide any calibrated power readings; the only requirements are that it works on 2 meters and is useable at low powers, in the 2 to 6 watt range (for an HT). I only need something to trim antennas.

Before anyone suggests the $40 one from Radio Shack, it's been discontinued.

-Steve N8KWV
--
Steve Bertsch
University Systems
bertsch.3@osu.edu

1840. Thanks! / Transformer update.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 05:45:07 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Jul19.214507.1@vax.sonoma.edu>
Source record: 117127

Just wanted to thank all of you for the posts and e-mail regarding my questions on dummy load oil and transformer rewinding. I believe I got a lot of good advice.

update: I went down to the surplus store today and was looking around. It looks like I can buy a transformer with a large enough core for my purposes for about $30 or so. I was going to get a small transformer to play with but decided to hold off until I looked through a few ARRL Handbooks to see if I could use my practice to make something that I could find a use for.

73 All,
Ken Harrison
N6MHG
email: harrisok@sonoma.edu

1841. Re: LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 06:22:33 UTC
From: vimx <vimx@delphi.com>
Message-ID: <J++wavp.vimx@delphi.com>
Source record: 117128

I have been experimenting with AM on 184.3 Khz. I use a 1.843 Mhz TTL
oscillator connected to a 4017 decade counter chip to generate
the carrier, which I then filter and modulate and amplify and into the antenna.
It sounds good on the receiver but no matter what I use as an antenna or how
much power I put into my output stage It doesn't go further than around the
block. I wonder if this frequency is by nature not as strong as CB for example.
I use a water pipe as ground and a fence as an antenna. I wonder if a variable
transformer (similar to a variac but for 100Khz) would help.
If I seem a little weird its because I am an expert on computers but I can't
build a radio. (I can build a computer though). I
would like to see how your project turns out. One more question though, is it
IMPOSSIBLE to make an effective LF HT?

1842. Re: SUMMARY DSP algorithms

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 06:48:10 UTC
From: vimx <vimx@delphi.com>
Message-ID: <RgxSStq.vimx@delphi.com>
Source record: 117130

I have a somewhat irrelevant question about DSP algorithms.
Would you be able to explain in simplest possible terms how a FFT or inverse is performed? For example , I know that a DFT gives you the amplitude of a frequency in a sample as the sum of all the samples multiplied by sine or cosine functions of said frequency.
In a textbook I saw a diagram of a FFT. The samples were added and subtracted from one another in an interesting pattern and occasionally multiplied by a "weighting function" which had e and i in it and I could not calculate.
If I could understand that weighting function enough to write it in BASIC that would help alot.
It amazes me that when the FFT is done the samples have been magically replaced by amplitudes of frequencies. How does it do that?

1843. Re: AM/FM Fax converter for use w/ HamComm interface & JVFAX (long!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 06:59:48 UTC
From: schro@norton.sni.de
Message-ID: <30ii14$cr7@nanette.pdb.sni.de>
Source record: 117132
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

In <CszAxq.1C9@abacus.demon.co.uk> dmb@abacus.demon.co.uk (David Byrne) writes:

>Thanks for posting the info Django. Has anyone the time to translate the
>documentation, and has anyone tried this circuit out ? Tips on antenna/rx etc.
>much appreciated. I hear good things about Hamcom regularly, and would be
>interested to try it out for wxsat if I can get hold of a suitable rx.

Just to avoid confusion: what is used here is the HamComm interface, but
the program you need for FAX/SSTV is JVFAX 6.0 written by DK8JV.

HamComm 3.0 does CW/RTTY/AMTOR with the same circuit.

73 Django
DL5YEC

1844. Re: reply to noise temp to NF conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 08:21:02 UTC
From: jdow@BIX.com
Message-ID: <jdow.774692462@BIX.com>
Source record: 117133

mack@mails.imed.COM (Mack Ray) writes:

> To Paul Breed:
>
> The conversion from NF to temperature and vice vesa is on page 12-2
> of 1988 and 1985 ARRL handbook (and presumably newer versions):
>
> Te = 290[antilog(NF/10)] in degrees Kelvin
>
> NF = 10 log(1+(Te/290)) where Te is degrees Kelvin

Typo somewhere:

NF = 10 log(1+(Te/290))
NF/10 = log(1+Te/290))
antilog((NF/10) = 1 + Te/290
290 antilog(NF/10) = 290 +Te
290 (antilog(NF/10) - 1) = Te

{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com

1845. Re: AM/FM Fax converter for use w/ HamComm interface & JVFAX (long!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 12:44:12 UTC
From: boyer@rd.eng.bbc.co.uk
Message-ID: <Ct8opp.592@bbc.co.uk>
Source record: 117134
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

David Byrne (dmb@abacus.demon.co.uk) wrote:
: In article <2vu9vn$hd2@nanette.pdb.sni.de>,
: W.F.Schroeder <schroeder.pad@sni.de> wrote:
: >AM/FM converter for wefax reception using JVFAX and the HamComm interface.

: Thanks for posting the info Django. Has anyone the time to translate the
: documentation, and has anyone tried this circuit out ? Tips on antenna/rx etc.
: much appreciated. I hear good things about Hamcom regularly, and would be
: interested to try it out for wxsat if I can get hold of a suitable rx.

: 73

: David.
: --
: David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
: Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445
: Here's a koan: If you have ice-cream I will give you some. If you have none,
: I will take it away from you. (it's an ice-cream koan).

the easiest aerial is crossed dipoles over a ground plane. You need 90
degrees phase shift between the dipoles. I will mail anyone further
details. As for receivers the cheapest in the uk is the circuit kit. It
has however a 30k if bandwidth which is slightly short. I use this at the
moment. The white clouds come out noisy because of the limited B/W.

The best value for money is the Remote Image group proscan receiver (50k B/W).

Any questions pse email me.
I remember how hard it is when starting and am only too pleased to help.

John B
john.boyer@rd.eng.bbc.co.uk

1846. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 12:47:00 UTC
From: davies@mobira.nmp.nokia.com
Message-ID: <30j6c4$b6a@noknic.nokia.com>
Source record: 117155

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
> .. bad writing is not so much the technical innovator's fault
> as it is the technical *editor's* fault. It's his job to ...

and zlau@arrl.org (Zack Lau (KH6CP)) writes:
> But, what if there is *no* technical editor? One of the best places
> to find out about the latest innovative projects is conference
> proceedings, which don't have the lead times associated with editing.

and James Speer (f_speerjr@ccsvax.sfasu.edu) wrote:
> Scientific writing, as we practice it in our journals, and as is found in most
> conference proceedings, has as its objectives clarity, completeness, and
> objectivity. As everyone knows, it tends to run to long, complex sentences,
> passive voice, depersonalized construction, etc. Much of what I read in QST,
> and many of our most popular books, like those by Doug DeMaw and Wes Hayward,
> are written is some version or other of "science-ese." ...

Speaking at someone who wrote some chapters in the RSGB uW handbooks,
and did the typesetting for them ...

One of the biggest problems was getting those who knew best about
particular subjects to spend the time writing about them for the
handbooks. To give you an idea, the titles of chapters were first
defined in the early 1980's. It took about 5 years to get all the
chapters for the first volume written! Some chapters then needed more
work than others to produce a reasonable style and this all took
best part of a year [by a volunteer, editor Mike Dixon]. Even then,
some would say the style is still a little too "science-ese", but
to an extent, we had a RSGB style guide to follow, eg must use
antenna, not aerial, and so on.

The later volumes (2, 3) followed on a bit quicker, but it really is hard
work to get the material in a nice readable format, if the author does
not do it. Many of those at the forefront of technical development
do not naturaly write in a nice readable format, and often see nothing
wrong with the "science-ese". I personally find I have to go over my
first draft and try crossing out say 1/3 of the words! Often nothing
is lost, and it can be turned into something much more readable!

However, the process can take so long that the latest material is
not in there. Eg RSGB uW HB vol 1 ch 6, GaAs FETs - info about the
earlier devices is there, but latest about HEMTs is not - it was
all written about 1985!

Zack is right about the technical conference proceedings being the
best place to get the latest technical info. Some of the ARRL microwave

ones are really good. But you don't get a book for beginners, instead a collection of papers for those already well into the subject. I think there is a place for both types of book.

73 Steve Davies G4KNZ.

1847. Re: LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 15:16:44 UTC
From: dickrb@lsid.hp.com
Message-ID: <Ct8vrw.GpA@hpcvsnz.cv.hp.com>
Source record: 117135

Greetings -

Years ago I was discussing this band with N6GN and he suggested a
national listening/calling frequency derived from dividing a 1MHz
source by 6 to get 166.6666666KHz. It would be easy to put it right
"on freq" by listening to the 5th harm at 5MHz..

de w7wkr

vimx (vimx@delphi.com) wrote:
: I have been experimenting with AM on 184.3 Khz. I use a 1.843 Mhz TTL
: oscillator connected to a 4017 decade counter chip to generate
: the carrier, which I then filter and modulate and amplify and into the antenna.
: It sounds good on the receiver but no matter what I use as an antenna or how
: much power I put into my output stage It doesn't go further than around the
: block. I wonder if this frequency is by nature not as strong as CB for example.
: I use a water pipe as ground and a fence as an antenna. I wonder if a variable
: transformer (similar to a variac but for 100Khz) would help.
: If I seem a little weird its because I am an expert on computers but I can't
: build a radio. (I can build a computer though). I
: would like to see how your project turns out. One more question though, is it
: IMPOSSIBLE to make an effective LF HT?

1848. Re: VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 16:10:30 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jul20.161030.10340@galileo.cc.rochester.edu>
Source record: 117137

In <30idfg$iks@charm.magnus.acs.ohio-state.edu> sbertsch@magnus.acs.ohio-state.edu writes:

> Can someone point me to any construction articles on VHF SWR meters? It
> doesn't have to be fancy, or even provide any calibrated power readings;
> the only requirements are that it works on 2 meters and is useable at
> low powers, in the 2 to 6 watt range (for an HT). I only need something
> to trim antennas.

Steve:
I have had VERY good results with a homebrew microstripline directional coupler. You use 2 pieces of single-sided PC board, etch a 50-ohm trace on one piece and use the other piece as the ground plane. you then glue the un-clad sides together to make a sandwhich that has two FINE (like 40-guage) pickup wires between them. I use 1N34A Ge diodes and 15-turn trimpots as the load on the other end.

Is this enough details for you? I posted a more detailed description a couple months ago, but I didn't bother to save it. If someone out there has it and wants to repost it, please do. If not, I will write it up in more detail if you or others need it...

73

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.
++
In nature, stupidity gets you killed.
In the workplace, it gets you fired.
In politics, it gets you re-elected.
++

1849. VHF directional Coupler/ SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 16:21:33 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jul20.162133.10764@galileo.cc.rochester.edu>
Source record: 117138

Gee, I was wrong, I DID save it...

I have had good success with stripline directional couplers at 2 meters and 430MHz. You make 2 single sided PC boards about 3 inches long and 2 inches wide. Calculate the width of a 50-ohm trace at TWICE the thickness of the PC board you are making. This is because you are going to make a sandwich with copper on the outside.

Etch an appropriately-wide trace down the length of the middle of the first board. On 1/16 inch FR-4 or G-10 that's 0.22 inch. Now comes the tricky part. You want to lay two fine wires between the trace and the ground plane, that is, in the middle of the sandwich, and have the ends poke through the ground plane without shorting to it. Drill 2 pairs of tiny holes about 3/4 inch from the ends of the GROUND PLANE BOARD and spaced about 1/16 inch apart. They should be centered on the board so that they will lay under the trace when the sandwich is assembled......

```
+-----------------------------------------------------+
| |
| |
|- - - - - - - - - - - - - - - - - - - -|
| : : | <- trace
|- - - - - - - - - - - - - - - - - - - -|
| |
| |
+-----------------------------------------------------+
^ ^
|---- pairs of holes ----|
```

Use a larger drill bit to remove the copper from around the holes to form relief areas to avoid shorting.

Run some fine magnet wire lengthwise between the pairs of holes to form two pickup loops running parallel to the trace on the substrate side of the ground plane board.

Now you are ready to glue the sandwich together. The first time I did this, I used RTV. 5-minute epoxy would works better. Just pull the loops tight so they are straight, spread the glue on the substrate side of the ground plane board, and clamp the trace board in place and wait until the glue dries/cures. Of course, the copper sides should be OUT and the substrate sides should be glued together...

End View

```
------------ trace
############################################## substrate
```

```
~~~~~~~~~~~~~~~~~~.~~.~~~~~~~~~~~~~~~~~~~ glue and wires
################################################## substrate
-------------------------------------------- ground plane
| | wires sticking out
```

Now you can put your diodes and terminating resistors on in the normal way.
One loop will be forward energy and the other will be reflected.

```
+-----------------------------------------------------+
| |
| |
| For. -|<- -/\/\/-* |
IN -> | : : | OUT ->
| *-/\/\/- ->|- Ref. |
| |
| |
+-----------------------------------------------------+
```

I suggest using a 10-turn trimpot of about 100 ohms as the terminating
resistor. This way it is easy to calibrate it without knowing the
characteristic impedance of the loops.

Solder BNC or N connectors to the ends of the directional coupler and your
metering circuit to the reflected connection. Apply power to the input with
the output terminated in a HIGH QUALITY 50 ohm dummy load. Adjust the
reflected trimpot for minimum reading on the meter. Reverse all connections
and tweak the forward loop in the same way.

You are more or less ready to rock and roll...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.
```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
In nature, stupidity gets you killed.
In the workplace, it gets you fired.
In politics, it gets you re-elected.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

1850. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 16:47:40 UTC
From: ve8ev@gov.nt.ca
Message-ID: <1994Jul20.164740.6528@gov.nt.ca>
Source record: 117139

In article <Ct5A12.3x7@wybbs.mi.org> pete@wybbs.mi.org (Pete Hoffswell) writes:
>I am building a 1.5 story house, with a walkout basement, starting
>next month. Anyone have any good ideas regarding building a new
>house and amateur radio?
>
>So far I've thought up of the following, and would appreciate
>anyone's comments:
>
>Grounding Rod: Punched in before basement cement is poured.
>Should it be isolated from the basement floor?
>(soil is sand, high water table (South west shorline michigan)
>
>Antennas in roof:
>Can you lay a antenna on the roof, before laying down shingles, or
>underlayment, or whatever? Would you have to limit your RF output?
>I'll have vaulted ceilings, so there's no real attic.
>
>Cable runs: As the walls go up, what cable runs should I make up
>them? The shack will be in the basement, and I'd like to run
>a nice piece of coax up, with a remote antenna switch.
>--
>-=-
>Pete Hoffswell |N9SSA |Internet: pete@wybbs.mi.org
>Holland, Michigan |616-395-5551 | Packet: n9ssa@wa8ure.#swmi.mi.usa.na
>-=-

The best idea is to put in one or two runs of 2" electrical conduit
from the rooftop to your shack location. That way it will be available
for future use. 2" might seem a bit large but it makes it easy to
fish a RG-213 cable with connectors on it through a pipe that may
already have a cable or two in it.

When extending your ground to the shack, use the biggest (ie: lowest
impedance) wire you can afford or better still use 1/2" copper pipe.

Lastly, run two separate 120V circuits to the shack and mount the
outlets at desk height. If you use #12 wire then you can always
change one circuit to a 20A or 250V if the need arises (check local
codes first).

One final thought: If you can possibly afford it hire a contractor to
do all the work :-) I've been QRT since April working on renovating
my house and doing all the work myself :-(

73
John - VE8EV

==========
John Boudreau VE8EV INTERNET: ve8ev@amsat.org
Inuvik, NWT, CANADA PACKET: VE8EV@KL7GNG.#NAK.AK.USA.NA
==========

1851. Re: VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 17:34:44 UTC
From: tomb@lsid.hp.com
Message-ID: <Ct925w.ls2@hpcvsnz.cv.hp.com>
Source record: 117142
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Steve Bertsch (sbertsch@magnus.acs.ohio-state.edu) wrote:
: Can someone point me to any construction articles on VHF SWR meters? It
: doesn't have to be fancy, or even provide any calibrated power readings;
: the only requirements are that it works on 2 meters and is useable at
: low powers, in the 2 to 6 watt range (for an HT). I only need something
: to trim antennas.

In several of the ARRL pubs (VHF manual, probably the FM and repeaters manual, maybe even the handbook) there's a "plumber's delight" directional coupler described. You need some way to get a known 1:1 SWR to calibrate it for directivity, and some sort of accurate power meter to calibrate for power, but if you can do that (and at least the 1:1 should be pretty easy if you have a long piece of lossy cable of the impedance you want to calibrate for), it should provide good accuracy. It works very much like the Bird meters, with a "slug" that fits into the line. The line is made from copper tubing fittings: a "T" is used to insert the probe into the line. Since half the work (or more) of making one is getting the parts and figuring out how to put them all together, it should be only marginally more effort to do a pair, and that would let you monitor both forward and reflected at the same time, and you could put that info into a calculating SWR circuit, to directly display SWR instead of fwd and refl powers.

73, K7ITM

1852. Re: a High Dymnic range Mixer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 17:41:53 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <30jnl1$o03@adm09.iac.honeywell.com>
Source record: 117141

jdow@BIX.com (jdow on BIX) wrote:
>>paulbreed@aol.com (PaulBreed) writes:

[del]

>>Has anyone used the new mixer from analog devices?
>>It has a SSB noise figure of 20dB and a dynamic range of 100+ dB
>>Is this noise figure of 20dB Good enough for 10 and 15M?

[del]

>SSB dB is nonsense salesjargon, IMHO.

[del]

Sorry Joanne, I dont agree with that. SSB noise figure has
nothing to do with SSB as a transmission mode (vs AM or CW)
but rather refers to the fact that there are images to any
mixing operation. eg. If the IF is 9MHz and the LO is 135MHz,
the rx will receive energy from both 144 and 126 MHz. Thus
the noise power will be double in the DSB case, ie the noise
figure would be 3dB higher than the SSB case. This is why the
manufacturers usually quote the SSB figure, because it is
lower. It assumes that you will provide adequate filtering
to remove the undesired image _prior_ to the mixer.

BTW, the noise figure, per se, is not related to bandwidth.
The noise power, hence s/n ratio is.

73's, Alf NU8I/G4ABB

Alf Green | Tel (602) 863 5842 | An organised person is just
Honeywell IAC | Fax (602) 789 4990 | too lazy to hunt for things.
Phoenix AZ | alf@agreen.iac.honeywell.com |
==

1853. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 17:42:54 UTC
From: tomb@lsid.hp.com
Message-ID: <Ct92JI.Iwp@hpcvsnz.cv.hp.com>
Source record: 117140

Pete Hoffswell (pete@wybbs.mi.org) wrote:
: I am building a 1.5 story house, with a walkout basement, starting
: next month. Anyone have any good ideas regarding building a new
: house and amateur radio?

: So far I've thought up of the following, and would appreciate
: anyone's comments:

: Cable runs: As the walls go up, what cable runs should I make up
: them? The shack will be in the basement, and I'd like to run
: a nice piece of coax up, with a remote antenna switch.

The coax will need replacement before the house, and your needs will change over time. I'd suggest you put as straight a piece of 1-1/2" or 2" conduit in as you can. The PVC conduit isn't too expensive and should be OK for this application as long as you don't try to run your coax too hot (don't try to run 1kW through RG-213 at 1GHz ;-). Depending on your yard, you might also put in a piece of conduit from the planned operating position to the back yard. I've found that the 100 foot continuous lengths of black polyethelene pipe make decent underground conduit for coax, but you do have to be careful of low spots that will accumulate water (through condensation if not through direct ingress of liquid at the ends).

73, K7ITM

1854. LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 18:04:43 UTC
From: BILLY@urhep.pas.rochester.edu
Message-ID: <1994Jul20.180443.15129@galileo.cc.rochester.edu>
Source record: 117144

What are the regs for operation on the LF bands? Power output? Modes? Any
licenses required? What freqs are allowed?

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu

My opinions. No one in their right mind would claim otherwise.
++
In nature, stupidity gets you killed.
In the workplace, it gets you fired.
In politics, it gets you re-elected.
++

1855. RE: VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 18:08:20 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <30jp6k$o3a@adm09.iac.honeywell.com>
Source record: 117143

sbertsch@magnus.acs.ohio-state.edu (Steve Bertsch) wrote:

>Can someone point me to any construction articles on VHF SWR meters? It
>doesn't have to be fancy, or even provide any calibrated power readings;
>the only requirements are that it works on 2 meters and is useable at
>low powers, in the 2 to 6 watt range (for an HT). I only need something
>to trim antennas.

>Before anyone suggests the $40 one from Radio Shack, it's been discontinued.

>-Steve N8KWV

The easiest one I've ever built used about a 12inch length of
RG58. Strip off the outer plastic cover. Get a couple of lengths of thin
insulated wire (~22awg) and a darning needle. Thread each length down the
cable, between the braid and the inner insulation. Put a small 250ohm pot at
opposite ends of each wire down to braid to act as terminations,
and on the other ends put series diode (1N914 or sim. works fine)
then 470pF cap down to the braid. Use abt 100uA meter and 5k series variable
resitor switched between the two diode outputs. Assuming you have a good 50
ohm load, (If not, a 1/2w 47 ohm resistor looks real close at 144), adjust
each 250R pot for loweset reading in the reverse direction.

This arrangement works great at the 1 - 10 watt range. For higher powers use
RG8 and a shorter length.

I can't give you the original reference, 'cos I first saw this many years
ago, probably in a European publication.

Let me know if you have any questions.

73's Alf NU8I/G4ABB

Alf Green | Tel (602) 863 5842 | An organised person is just
Honeywell IAC | Fax (602) 789 4990 | too lazy to hunt for things.
Phoenix AZ | alf@agreen.iac.honeywell.com |
==========

1856. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 19:42:22 UTC
From: harrism@zero.rtp.dg.com
Message-ID: <1994Jul20.194222.18105@dg-rtp.dg.com>
Source record: 117145

In article <30g0h9$qcf@goofy.iaccess.za>, briane@iaccess.za (Brian Ellse) writes:
|> In article <2E2A99C0@msmail.uthscsa.edu>, Muenzler, Kevin wrote:
|> > Yes, mineral oil is a little expensive and is probably the
|> > safest to use in a dummy load. Don't try anything like motor
|> > oil, it has many different types of lubricants that have
|> > different volatility. The 'best' type of oil is "turbine oil."
|> > You can get it at many farm and ranch supply stores. One of the
|> > easiest to find is sold by TEXACO distributors, Regal Oil R&O Number
|> > 46. You can usually find it in 5 gallon cans sold as "turbine oil."
|> > I don't know how easy it will be for you to find where you are. Just
|> > go out to one of the small towns in your area.
|>
|> My experience with dummy loads has shown that the cheapest and most
|> efficient oil to to use is Transformer oil. This is the oil used in
|> distribution transformers, as used by your power utility companies in the
|> USA. This is the same oil that we use in our oil-cooled welders here in
|> South Africa. I am sure you must have the same critter over there!
|>
|> The oil in the dummy load is ostensibly used for cooling/heat dissapation,
|> and this what the oil in transformers and welders is there for.
|>
|> Hope this info is useful to someone!!

Be careful as the oil in old transformers was pretty toxic/hazardous.
I don't know how to tell what the difference is but there are additives.
Sorry I can't help you more - I'm using mineral oil.

regards, Mike

1857. Transformer Oil and P.C.B.'s

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 20:56:52 UTC
From: ham@wam.umd.edu
Message-ID: <30k32k$scc@cville-srv.wam.umd.edu>
Source record: 117146

> Be careful as the oil in old transformers was pretty toxic/hazardous.
>I don't know how to tell what the difference is but there are additives.
>Sorry I can't help you more - I'm using mineral oil.
>
>regards, Mike

The old transformer oil had in it a substance called

"Polychlorinated Biphenyls" a.k.a. P.C.B.'s

which are a known carcinogen. Transformer oil hasn't
contained PCB's for some years, but there are MANY older
transformers in service that DO contain PCB-contaminated
oil. Not hazardous unless it leaks, but don't use it in
a dummy load.

Scott NF3I

--
73, _________ _________ The
\ / Long Original
Scott Rosenfeld Amateur Radio NF3I Burtonsville, MD | Live $5.00
WAC-CW/SSB WAS DXCC - 130 QSLed on dipoles __________| Dipoles! Antenna!

1858. Need info from late 60s/early 70s handbook or whole book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 21:53:34 UTC
From: dgf@netcom.com
Message-ID: <dgfCt9E5A.9ot@netcom.com>
Source record: 117149

I'm setting out to build a 4-1000 HF amp and would like to get some late sixties and/or early seventies era ARRL handbooks (would be willing to buy same) or alternatively photocopies of related articles in these handbooks.

73 Dave WB0GAZ dgf@netcom.com (Denver)

1859. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-20 23:01:48 UTC
From: R0264@vmcms.csuohio.edu
Message-ID: <16FF9FD90.R0264@vmcms.csuohio.edu>
Source record: 117147

In article <1994Jul20.180443.15129@galileo.cc.rochester.edu>
BILLY@urhep.pas.rochester.edu (Bill VanRemmen) writes:

>
>What are the regs for operation on the LF bands? Power output? Modes? Any
>licenses required? What freqs are allowed?
>
> -Bill VanRemmen, KA2WFJ
> billy@urhep.pas.rochester.edu
>
> My opinions. No one in their right mind would claim otherwise.
>++
> In nature, stupidity gets you killed.
> In the workplace, it gets you fired.
> In politics, it gets you re-elected.
>++
>
See QST, April, 1994 for answers to most of your questions. It has a picture
of a homebrew lowfer on the front, and an article about the design and
regs. No license, but a limit of 1 Watt, and a limit of 50 feet length for
the antenna. That is pretty short considering the wavelengths involved.
That is for the 160-190 MHz band. The medfer band is 510 to 1750 Mhz
(I think) and the power limit is 100 milliwats (I think), and an antenna
max length of about 10 feet, again pretty short. The length limits are
actually 15 and 3 meters, but they come out close to 50 and 10 feet.
Phil Emerson, aa8jo.

1860. Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 00:00:03 UTC
From: paulbreed@aol.com
Message-ID: <30kdq3$m4l@search01.news.aol.com>
Source record: 117148

I have seen many referances to QEX lately, and I don't know what it is about and who publishes it?

Thanks in Advance

1861. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 00:16:11 UTC
From: bart@wb6hqk.uucp
Message-ID: <Ct9KrJ.EGG@wb6hqk.uucp>
Source record: 117150

In article <1994Jul20.180443.15129@galileo.cc.rochester.edu>,
Bill VanRemmen <BILLY@urhep.pas.rochester.edu> wrote:
>What are the regs for operation on the LF bands? Power output? Modes? Any
>licenses required? What freqs are allowed?
>

Here is part 15.217 of the FCC regulations.

15.217 Operation in the band 160 - 190 kHz

(a) The total input power to the final radio frequency stage (exclusive
of filament or heater power) shall not exceed one watt.

(b) The total length of the transmission line, antenna, and ground lead
(if used) shall not exceed 15 meters.

(c) All emissions below 160 kHz or above 190 kHz shall be attenuated at
least 20 db below the level of the unmodulated carrier. Determination
of compliance with the 20 dB attenuation specifaction may be based
on measurements at the intentional radiator's antenna output terminal
unless the intentional radiator uses a permanently attached antenna, in
which case compliance shall be demonstrated by measuring the radiated
emissions.

Part 15 allows exemption from the type acceptance requirements for hobby
and protoype purposes for a limited number of units but you still must
adhere to good engineering design, construction and alignment practices.

bart

bart@wb6hqk.ampr.org

1862. Kenwood TS-50 to serial

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 00:33:31 UTC
From: levin@cosmic.physics.utah.edu
Message-ID: <1994Jul21.003331.6344@math.utah.edu>
Source record: 117151

Hi,

I am looking for information on how to build a serial cable
for my Kenwood TS-50. Kenwood wants $100 and MFJ is now
selling one for $50. After saving for over a year for the radio
I really can't spend even $50. Since MFJ is making one, it can't
be too hard. If anyone can tell me how, I would really appreciate
it. Also, if possible I would like to know how to talk to the radio
after building a cable. Does anyone have this information?

Please respond by e-mail so that I can summarize for everyone else.
Also, my news feed only works occasionaly and I might miss a general
response.

My address is: levin@cosmic.physics.utah.edu

Thanks in advance.

-Chris Levin

1863. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 04:57:19 UTC
From: hamilton@BIX.com
Message-ID: <hamilton.774766639@BIX.com>
Source record: 117152

I'll pass along two suggestions if you're building. Both are things
I'm looking at myself as my wife and I lay out our own plans for some
serious renovation next year.

1. If you're going to have heavy equipment out there digging and
pouring foundations, that's the time, if ever there was one,
to think about doing a tower. The incremental cost of asking
the backhoe operator to dig a little more and the concrete guys
to bring out a few more yards is nothing against what it'd cost
as a separate project.

2. Put a cable chase up thru the core of the building if it's a
multi-story. Running cables up from the basement to the attic
of a two-story is certainly do-able (we've done it) but not
fun. Even if there's a way to do it, there are often all
kinds of places where the cable can snag, totally out of
reach. In our renovation, I expect to just run 4" PVC up
thru the core of the building. The nice smooth walls of
the pipe should make running cables a whole lot easier.

Regards,
Doug Hamilton KD1UJ hamilton@bix.com Ph 508-358-5715
Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117, USA

1864. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 05:21:22 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Jul21012122@mipgsun.mipg.upenn.edu>
Source record: 117153

This would be a good time to make sure that you have enough power running to your shack. A 220V line would be useful for a linear. The 120V lines should have enough current capacity to handle any anticipated equipment with capacity to spare. It is cheap now but as a special job, good luck.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

1865. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 05:27:15 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Ct9z5F.54u@news.Hawaii.Edu>
Source record: 117154

In article <Ct9KrJ.EGG@wb6hqk.uucp> bart@wb6hqk.uucp (Bart Rowlett) writes:
>
>Here is part 15.217 of the FCC regulations.
>
>15.217 Operation in the band 160 - 190 kHz
>
>(b) The total length of the transmission line, antenna, and ground lead
> (if used) shall not exceed 15 meters.

Because of this particular limitation many experimenters place the
xmtr directly at the base of the antenna (no transmission line).

Jeff NH6IL

1866. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 09:24:03 UTC
From: mjsilva@ted.win.net
Message-ID: <416@ted.win.net>
Source record: 117156

In article <30kdq3$m4l@search01.news.aol.com>, PaulBreed (paulbreed@aol.com) writes:
>I have seen many referances to QEX lately, and I don't know what it is
>about and who publishes it?
>
It's a small (30-some pages), technical publication published monthly by
the ARRL. $12 a year, if I remember correctly. Look in a QST for
subscription info.

73,
Mike, KK6GM

1867. Re: LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 14:58:02 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul21.145802.4300@ke4zv.atl.ga.us>
Source record: 117161

In article <J++wavp.vimx@delphi.com> vimx <vimx@delphi.com> writes:
> I have been experimenting with AM on 184.3 Khz. I use a 1.843 Mhz TTL
>oscillator connected to a 4017 decade counter chip to generate
>the carrier, which I then filter and modulate and amplify and into the antenna.
>It sounds good on the receiver but no matter what I use as an antenna or how
>much power I put into my output stage It doesn't go further than around the
>block. I wonder if this frequency is by nature not as strong as CB for example.
>I use a water pipe as ground and a fence as an antenna. I wonder if a variable
>transformer (similar to a variac but for 100Khz) would help.

At this frequency, vertical antennas work much better than low long wires,
actually *short* wires in this case, a halfwave antenna would be over 1.6 km
long. Since there's a length limit of 15 meters in the rules, you're going
to have to use a heavily loaded antenna to reach resonance, capacitance top
hats are a big plus. To hold down losses, the antenna has to be very high Q.
The Q will be so high that the AM sidebands will be off resonance. This does
bad things to frequency response. Limiting the modulation sidebands to a
few Hertz will work better. That implies CW or data modulation rather than
voice.

To achieve sufficient Q, you need to do things like use all silver plated
materials, silver plated Litz wire is best, and use basketweave style
coils to reduce parasitic capacitance. The ground system is critical,
a water pipe isn't nearly good enough. A broadcast style 200 radial
system isn't even good enough unless it's augmented by copper screening
laid around the base of the antenna. Every joint needs to be welded
rather than soldered. The resistance of a soldered joint will introduce
too much loss.

(This may be an application for the mythic crossed field antenna design.)

> If I seem a little weird its because I am an expert on computers but I can't
>build a radio. (I can build a computer though). I
>would like to see how your project turns out. One more question though, is it
>IMPOSSIBLE to make an effective LF HT?

Yes, if you want any reasonable range. A range of a few hundred feet is
possible with a reasonable HT, but to reach out hundreds of miles you
need an antenna system similar to the one described above. Routine data
transmission over 1,000 mile paths is possible, but the data rate needs
to be very low, and coherent detection techniques need to be used. The
signal will be totally inaudible to the human ear over such distances
due to atmospheric and manmade noise.

Gary
--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1868. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 15:55:38 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul21.155538.4613@ke4zv.atl.ga.us>
Source record: 117162

In article <Ct5A12.3x7@wybbs.mi.org> pete@wybbs.mi.org (Pete Hoffswell) writes:
>I am building a 1.5 story house, with a walkout basement, starting
>next month. Anyone have any good ideas regarding building a new
>house and amateur radio?
>
>So far I've thought up of the following, and would appreciate
>anyone's comments:
>
>Grounding Rod: Punched in before basement cement is poured.
>Should it be isolated from the basement floor?
>(soil is sand, high water table (South west shorline michigan)

You want to install a *Ufer* ground. A Ufer ground consists of rebar *in* the concrete. Make sure all the rebar is properly electrically bonded together before they pour the floor, and bring a termination out for the shack. You may want to sink some regular ground rods in the mesh below floor level as well before the concrete is poured. Connect them with minimum #8 solid wire back over to the shack termination point. That will become your single point ground for all of your equipment. (Concrete is a better conductor than dirt, take advantage of it. The concrete will *not* explode under lightning currents if there is sufficient rebar in it to spread the currents. If in doubt, consult a good text on Ufer grounding.)

Now is also a good time to get the tower base poured. It should be Ufer grounded as well, and in addition have a ground ring and ground rods installed at this time. Run a low inductance strap back from this to your single point in the shack. You may also want to do a protective loop around the perimeter of the house. This is just a #8 wire buried around the outside of the footings and connected *at one point* back to the shack single point connection. Don't make any other connections to this loop. (Obviously, tie any water piping, power, telco, and cable TV grounds back to your single point connection as well. *NEVER DAISY CHAIN GROUNDS* Everything must tie together only at the single point connection.)

>Antennas in roof:
>Can you lay a antenna on the roof, before laying down shingles, or
>underlayment, or whatever? Would you have to limit your RF output?
>I'll have vaulted ceilings, so there's no real attic.

Antennas work better when high and in the clear. You can lay an antenna in wooden construction, but be careful about power levels. Not only will the structure absorb some power, but the EM fields *in* the house will become quite high. This may be a significant

bio-hazard. And it'll certainly be a potential source of EMI for other electrical and electronic equipment in the house.

>Cable runs: As the walls go up, what cable runs should I make up
>them? The shack will be in the basement, and I'd like to run
>a nice piece of coax up, with a remote antenna switch.

Run a 4 inch plastic or metal conduit up through the house for cable runs. Fit the conduit with a high quality pull rope so you can add cables at a later time. Also run an underground conduit out to the tower base. Make sure it slopes into a "dry well" at one end, and use 180 degree elbows at each end. The pull ropes should be *twice* the length of the conduit runs, and should be securely anchored at each end.

Now is also the time to get the proper power feed to the shack. Install a subpanel off the main house panel, a 100 amp panel would be good. 100 amp panels are about as cheap as smaller panels so you might as well use one. Equip it with a prominent and well marked master disconnect switch. Install *lots* of outlets. You can never have enough. Install outlets at the normal floor level *and* at bench height.

Now is also the time to install CATV and Ethernet cabling all over the house. Alarm wiring goes in now too. Run several extra twisted pairs into each room. These can be used for "smart house" connections in the future.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1869. Re: Dummy Load Oil?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 16:09:53 UTC
From: greg@netcom.com
Message-ID: <gregCtAswH.n38@netcom.com>
Source record: 117159

In article <H.eg.8cMnTIL5gT_@harvee.billerica.ma.us> esj@harvee.billerica.ma.us writes:
>
>only the looks you get when you walk up to the counter carrying a gallon
>of mineral oil...
>
>A: well, at least it won't overheat now.
>
>A: but the instructions told me to!
>
>A: my S.O. won't let me use transformer oil.
>
>A: hey, it's only a hobby.

A: Simba's been a bit irregular lately.

Greg

1870. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 16:56:34 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Jul21.105634.1@ccsvax.sfasu.edu>
Source record: 117157

> 73
> John - VE8EV
> ==
> John Boudreau VE8EV INTERNET: ve8ev@amsat.org
> Inuvik, NWT, CANADA PACKET: VE8EV@KL7GNG.#NAK.AK.USA.NA
> ==
>

I second all that John (above) has said, and would also suggest being sure there is some bit of roof properly reinforced for the tripod you'll want to hang those beams on :-)

72!
--
If RST>519 Jim Speer, K5YUT
Then cut_power; f_speerjr@ccsvax.sfasu.edu

1871. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 17:06:31 UTC
From: R0264@vmcms.csuohio.edu
Message-ID: <16FFAAA4A.R0264@vmcms.csuohio.edu>
Source record: 117158

In article <16FF9FD90.R0264@vmcms.csuohio.edu>
R0264@vmcms.csuohio.edu writes:

>
>In article <1994Jul20.180443.15129@galileo.cc.rochester.edu>
>BILLY@urhep.pas.rochester.edu (Bill VanRemmen) writes:
>
>>
>>What are the regs for operation on the LF bands? Power output? Modes? Any
>>licenses required? What freqs are allowed?
>>
>> -Bill VanRemmen, KA2WFJ
>> billy@urhep.pas.rochester.edu
>>
>> My opinions. No one in their right mind would claim otherwise.
>>++
>> In nature, stupidity gets you killed.
>> In the workplace, it gets you fired.
>> In politics, it gets you re-elected.
>>++
>>
>See QST, April, 1994 for answers to most of your questions. It has a picture
>of a homebrew lowfer on the front, and an article about the design and
>regs. No license, but a limit of 1 Watt, and a limit of 50 feet length for
>the antenna. That is pretty short considering the wavelengths involved.
>That is for the 160-190 MHz band. The medfer band is 510 to 1750 Mhz
>(I think) and the power limit is 100 milliwats (I think), and an antenna
>max length of about 10 feet, again pretty short. The length limits are
>actually 15 and 3 meters, but they come out close to 50 and 10 feet.
> Phil Emerson, aa8jo.
Um, er, I meant KHz everywhere I wrote MHz. Also, after looking at the
article again, I see that the medfer band is from 510 not clear up to
1750, but only to 1710 or maybe 1705. By the way, I ordered two kits
from the author of the article, and have not heard from him for awhile.
I suppose he is still scrounging the parts or something.
Phil Emerson, aa8jo.

1872. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 17:22:19 UTC
From: greg@netcom.com
Message-ID: <gregCtAw98.Art@netcom.com>
Source record: 117160

In article <Ct9z5F.54u@news.Hawaii.Edu> jeffrey@kahuna.tmc.edu (Jeffrey Herman) writes:
>In article <Ct9KrJ.EGG@wb6hqk.uucp> bart@wb6hqk.uucp (Bart Rowlett) writes:
>>
>>Here is part 15.217 of the FCC regulations.
>>
>>15.217 Operation in the band 160 - 190 kHz
>>
>>(b) The total length of the transmission line, antenna, and ground lead
>> (if used) shall not exceed 15 meters.
>
>Because of this particular limitation many experimenters place the
>xmtr directly at the base of the antenna (no transmission line).

It sort of surprised me that the little Lowfer rig in QST (April? '94)
didn't have the rf portion out at the antenna. This seems like the most
basic expedient for legal success on this band.

Greg

1873. Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 18:13:26 UTC
From: os2user@vmdoug.utsd.att.com
Message-ID: <1994Jul21.181326.24439@devildog.att.com>
Source record: 117166

I'm looking for a simple two-meter CW transmitter for use on RS-10. I
can't use a crystal controlled transmitter because the protocol on RS-10
requires that the two-meter uplink signal be changed slowly during
the QSO so as to maintain a constant downlink frequency.

Does anyone know of any plans, kits, schematics, or outright rigs-for-sale
with a non-crystal controlled two meter CW transmitter?

Doug KA2UPW
doug@acpy01.utsd.att.com

Above opinions are my own and not necessarily those of AT&T.

1874. Re: LF Band experience?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 18:59:12 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <94712@uugate.wa7slg.ampr.org>
Source record: 117163

Several years ago I did some LF-band experience.

The quickest and dirtiest antenna is probably a vertical.

Actually, I used a flat-top "T" type antenna strug between two trees
(but insulated from the trees!!!) tied into an almost-decent ground
(a galvanized steel irrigation system in the yard, as well as a chain-link
fence, not to mention a ground rod.

This first antenna system was rather poor (by LowFER standards) but it worked.
It was tuned to the transmitter (a bipolar design, at the time... Ugh!)
by having a Horizontal Oscillator Coil (from a TV) in series. The series
antenna current is then peaked (by adjusting the slug.)

This tuning network is pretty miserable (low Q, high distributed capacitance,
fairly high resistance, etc.) but it was easily audible (even under part 15
rules!) for several miles radius. Keep in mind that RFI is terrible down
there (most RFI filters don't start working until you get above 100 KHz!)
from almost anything - especially light dimmers!

If you can't easily hear the background noise on your receiver (be it QRM
or QRN) then you need to improve it by either better-matching your antenna
to your receiver (those TV coils work well here since you *can* tolerate loss,
plus the selectivity will keep AM-BCB RFI to a minimum...)

DO NOT put a preamp inline unless your antenna is really short (< 20 feet or
so) and is something like an "E-field" whip or an "H-Field" loop where
the impinging signal produces a very low terminal voltage at the antenna.

For a while, I ran a LowFER beacon ("CT" on 177.75000 KHz) that ran
CCW (10 baud) as well as 10 baud BPSK (and 1 baud BPSK, for a while...)
and it was regularly copied in California and Wyoming (from the Salt
Lake City, Area...)

I also experimented with SSB (using my Drake TR-7 as the exciter. Yes,
the TR-7 *WILL* generate a useable signal down to about 30 KHz from the
LF port if you have the AUX-diode matrix configured properly, as well
a simple outboard box...) on 177.750 KHz. It was an endless-loop tape
(60 seconds) with a clip of music and a voice and CW ID. This was
easily copied in Orem (60-70 miles south, over 2 mountain ranges...)

Hey, you can do that down there. Its a Part 15 service! Since GWEN
has been cancelled, perhaps the band will "clear" again... eventually:-)

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

1875. Re: Building a house: Special Consideration

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 19:39:45 UTC
From: jkaidor@synoptics.com
Message-ID: <CtB2MA.8F6@synoptics.com>
Source record: 117164

In article 774766639@BIX.com, hamilton@BIX.com (hamilton on BIX) writes:
>
>
>2. Put a cable chase up thru the core of the building if it's a
> multi-story.

**** Amen to that! Remember, the service life of coax is only 5-10 years.

- Jerry Kaidor, KF6VB

1876. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 20:19:01 UTC
From: esh6n@brain.neuro.virginia.edu
Message-ID: <CtB4Fp.CC5@murdoch.acc.Virginia.EDU>
Source record: 117167

```
I just built a house and put conduits in the walls, tubes thru the
(poured) concrete basement walls.
An additional thing I'd do is:
a run of #4 or larger copper wire or 1/2 inch copper pipe entirely
around the house with a ground rod at the electrical service entrance
and another ground rod at the closest point to the antenna entrance
with heavy pigtail up from that rod to the shack.
I agree about the two circuits into the ham shack. I've got 3 circuits,
two 120v and a 240v. If you have lots of lightning, you might want
an easy disconnect for the shack circuits. Not breakers, but large-gap
switches. This so you can disconnect everything when storms approach.

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
Ned Hamilton NTC Department of Neurosurgery
nedh@virginia.edu University of Virginia
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
```

1877. Re: RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 20:25:09 UTC
From: wells@fc.hp.com
Message-ID: <30mlj6$kee@tadpole.fc.hp.com>
Source record: 117165

Stephen Modena (ab4el@jabba.cybernetics.net) wrote:

: In article <2vdlfq$lnj@news.tamu.edu>,
: Chris Schmidt <cschmidt@diralect.me.pvamu.edu> wrote:

: >Radio Squeal. I have a RCI 2950 with a Texas Star DX 667V amplifier'

Stephen,

you ask:

: Am I behind the times? I've never heard of this HAM equipment?

Why, Yes, you are. The RCI is a 10 meter ham xcvr that everyone knows
can't be modified to operate on the 25 thru 35 mhz frequencys. Nudge nudge
wink wink solder solder.

: >and a cheap Mag-mount base with a base loaded antenna with about
^^^^^^^^^^^^^^^^^^
: >a 3.5" whip on top.
^^^^
By assuming that this antenna has been cut for 1/4 th wave operation.... this
equates out to roughly 70 mhz.... There are lots of hams on the new 70 mhz
band!

: >I do not have this problem when not using
: >the amplifier.

Answer is simple.... 1) disconnect the antenna and 2) don't use the amplifier.

: >73,
: >
: >chris <=== callsign???
: >Houston tx.
: >

: Are we being asked to give advice on a KW amp for the Citizens Band?

No more than likely just a couple hundred watts. If it had been a full gallon,
then chris might have been asking about the longterm effects of severe RF burn.

: 73 Steve AB4EL ab4el@Cybernetics.NET

* 10-4! John Wa0lhb in das Fort.

1878. Re: VHF SWR meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-21 22:03:36 UTC
From: mack@ncifcrf.gov
Message-ID: <CtB9A0.LKM@ncifcrf.gov>
Source record: 117069
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <30idfg$iks@charm.magnus.acs.ohio-state.edu> sbertsch@magnus.acs.ohio-state.edu (Steve Bertsch) writes:
>Can someone point me to any construction articles on VHF SWR meters? It
>doesn't have to be fancy, or even provide any calibrated power readings;

It does have to be accurate though in the sense that it reads 0 when the line is terminated in 50ohms. I've built several based on strip lines etched onto PC board (that was 20yrs ago) using designs similar to those found in the RSGB manual. As long as the impedance on the strip lines is correct then the board is precalibrated. I never got the trasnformer type (wound on toroid) to work.

BTW I buy the Daiwa ones now, they have those neat twin needles.

Joe Mack NA3T mack@ncifcrf.gov

1879. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 02:37:42 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Jul22.023742.3607@vlsi.polymtl.ca>
Source record: 117068

In article <30kdq3$m4l@search01.news.aol.com> paulbreed@aol.com (PaulBreed) writes:
>I have seen many referances to QEX lately, and I don't know what it is
>about and who publishes it?
>
>Thanks in Advance

QEX is published by the ARRL, the same people who publish QST. They are in
Newington CT.

Nick

--

* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *

* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *

1880. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 02:46:46 UTC
From: zlau@arrl.org
Message-ID: <1994Jul22.024646.19351@arrl.org>
Source record: 117073

James Speer K5YUT (f_speerjr@ccsvax.sfasu.edu) wrote:

: Good textbook writing is, in my opinion, harder. In addition to trying to be
: clear and complete, you also have to be interesting. That means, among other
: things, a lot of variation in sentence length, and a strong preference for the
: active voice. It is so EASY to write, "In this study, the children were
: presented with xyz stimuli, then required to do abc in response." It is so much
: less natural for a scientist, but so much more engaging, to write, "In this
: study, the children saw xyz, and responded with abc."

Yes, and the complexity of electronics makes it that much harder. Actually,
it isn't so much the fact that it is complex, but the fact that some people
do in fact have an amazingly deep grasp of their province of it.
Thus, the challenge is accurately conveying that expertise, without
misleading people. For instance, Dr. Rhode recently remarked upon the
clipping diode used in an FET oscillator which resulted in a whole bunch of
erroneous conclusions by the amateur community. I can say that I have no
intention of attempting to improve the phase noise of an oscillator
circuit is probably superior to that found in most transceivers today.

: I guess it's true that a good editor could convert the one to the other, but I
: can tell you for sure, mine doesn't have time to do so. We talk from time to
: time about rhetorical strategies, but getting it right is on my nose, not his.

Nor do some authors appreciate the attempts at a conversion. I know of
at least one well published author who says he carefully crafts every
word, and doesn't want changes. Not surprisingly, most of his articles
were published in a magazine that did little editing.

Interestingly, I'd say the introduction of the computer into the hamshack has
apparently had little effect on the amount of articles being written for
amateur magazines. It has enabled a few authors to write rather lengthy
articles :-).

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1881. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 04:37:32 UTC
From: faunt@netcom11.netcom.com
Message-ID: <FAUNT.94Jul21213733@netcom11.netcom.com>
Source record: 117101

So, how much current at 220 is enough? Is a 20A 220V circuit enough,
or should that circuit be pulled with #10 or #8?
73, doug

1882. HELP ME MOD A 2m FM AMP FOR SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 05:51:01 UTC
From: peaster@cherokee.nsuok.edu
Message-ID: <1994Jul22.055101.15855@cherokee.nsuok.edu>
Source record: 117070

I have a Motorola commercial grade amplifier tuned to the two meter band. I have tried to use it on side band.... but, of course the relay started chattering. I need help modifying the relay so it will stay open a bit longer. I have heard that it is possible to put a capacitor or a resistor across the relay terminals..... Is this correct? If so, what values...and exactly where? Any other Ideas? If so please send me E-Mail at Peaster@Cherokee.NSUok.edu (our net news is not always up and running so an E-Mail response would be *GREATLY* appreciated!)

Thanks & 73'S
Mike Peaster
KC5BNC
Peaster@Cherokee.NSUok.edu

1883. Re: AM/FM Fax converter for use w/ HamComm interface & JVFAX (long!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 10:03:44 UTC
From: dmb@abacus.demon.co.uk
Message-ID: <CtC6M9.9Cr@abacus.demon.co.uk>
Source record: 117089
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

Thanks to Ray Johnston & his XYL Inge, I've received a translation of the docs
for the AM/FM converter, which I'll happily email to anyone who's interested.

David.

--
David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445
Here's a koan: If you have ice-cream I will give you some. If you have none,
I will take it away from you. (it's an ice-cream koan).

1884. Re: Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 13:41:30 UTC
From: zlau@arrl.org
Message-ID: <1994Jul22.134130.27455@arrl.org>
Source record: 117085

Doug KA2UPW os2user@vmdoug.utsd.att.com wrote:
: I'm looking for a simple two-meter CW transmitter for use on RS-10. I
: can't use a crystal controlled transmitter because the protocol on RS-10
: requires that the two-meter uplink signal be changed slowly during
: the QSO so as to maintain a constant downlink frequency.

If the transmitter uses an HF oscillator and a multiplier, it may be
possible to vary the transmitter frequency with a variable capacitor
(convert the crystal oscillator into a VXO)

: Does anyone know of any plans, kits, schematics, or outright rigs-for-sale
: with a non-crystal controlled two meter CW transmitter?

The May 1993 QST has a pair of designs to generate a 144 MHz signal for
Ricks phasing transmitter and receiver. You have your choice of a VXO
or a more traditional LC oscillator/mixer/crystal oscillator. For CW,
a MAV-11 MMIC will drive a hybrid module such as the M57713 to 10 watts
output. If you want SSB, I recommend a driver for the module with less
distortion, such as the MRF 581 design in March 1994 QEX.

And, if you ever want to run a really big 2 meter signal, I suggest you
skip the hybrid module and look into something like a MRF 137 FET running
off 28 volts with lots of bias current. Properly done, this can drive
a high gain tube amplifier quite cleanly. Your neighbors will really
appreciate the clean signal.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1885. Re: Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 13:45:35 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul22.134535.9027@ke4zv.atl.ga.us>
Source record: 117071

In article <1994Jul21.181326.24439@devildog.att.com> doug@acpy01.utsd.att.com writes:
>I'm looking for a simple two-meter CW transmitter for use on RS-10. I
>can't use a crystal controlled transmitter because the protocol on RS-10
>requires that the two-meter uplink signal be changed slowly during
>the QSO so as to maintain a constant downlink frequency.

Yes you *can* use a crystal controlled transmitter. All you have to
do is convert the XO to a VXO by addition of a variable capacitor.
You can easily pull the crystal enough to compensate for doppler.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1886. Re: RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 13:50:39 UTC
From: zlau@arrl.org
Message-ID: <1994Jul22.135039.27646@arrl.org>
Source record: 117086

John Wells WA0LHB (wells@fc.hp.com) wrote:
: ^^^^^^^^^^^^^^^^^^
: : >a 3.5" whip on top.
: ^^^^
: By assuming that this antenna has been cut for 1/4 th wave operation.... this
: equates out to roughly 70 mhz.... There are lots of hams on the new 70 mhz
: band!

UK amateurs have had the 70 MHz for quite some time. I wonder how many
remember the calls of the first stations to work crossband 50/70 MHz
across the Atlantic?

I don't know what you are using, by punching the numbers in my HP
calculator gives me a frequency of 843 MHz. Perhaps you are confusing
feet with inches.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1887. Re: How to design a button cell holder : suggestions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 14:30:04 UTC
From: landisj@drager.com
Message-ID: <1994Jul22.103004.118@drager.com>
Source record: 117072

In article <JON_SREE.94Jul17235854@world.std.com>, jon_sree@world.std.com (Jon Sreekanth) writes:
[snip]
> ... what is finger stock ? What kind of stores carry it ?
>
Jon, finger stock is, well, RF gasketing material. It's made of phosphor bronze, or other highly conductive, "springy", metal, and is usually attached to RF enclosures along edges that need to open for service access. It consists of parallel "fingers" of metal, laid out comb-like. The back of the comb is rivited or screwed to one chassis part. The fingers rest upon the the other. This effectivly closes any gaps in the shielding for RF. Sometimes the fingers extend almost straight out from the back. Other times they're bent around in a D shape.

I've never seen it in stores. I've seen it in Surplus Sales of Nebraska's catalog. They advertise in QST. A scrapyard may also be a source, or a hamfest.
Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WA3TSW.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

1888. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 17:56:11 UTC
From: harrism@zero.rtp.dg.com
Message-ID: <1994Jul22.175611.21088@dg-rtp.dg.com>
Source record: 117074

In article <Ct5A12.3x7@wybbs.mi.org>, pete@wybbs.mi.org (Pete Hoffswell) writes:
|> I am building a 1.5 story house, with a walkout basement, starting
|> next month. Anyone have any good ideas regarding building a new
|> house and amateur radio?
|>
|> So far I've thought up of the following, and would appreciate
|> anyone's comments:
|>
|> Grounding Rod: Punched in before basement cement is poured.
|> Should it be isolated from the basement floor?
|> (soil is sand, high water table (South west shorline michigan)

Well, you really should only have *one* ground rod for the whole
house and NEC already requires it. You might, however, make sure it
is properly installed (mine was laying at a shallow angle), is a good, solid
copper one. You might, however, want to run some beefy wire (#6) from it
to your shack.

|>
|> Antennas in roof:
|> Can you lay a antenna on the roof, before laying down shingles, or
|> underlayment, or whatever? Would you have to limit your RF output?
|> I'll have vaulted ceilings, so there's no real attic.

It'd be lossy but, yes, you could. Do you have covenants to
worry about? You might want to beef up a section or two so that you
could easily add a roof mount tower or other antenna securing stuff.

|>
|> Cable runs: As the walls go up, what cable runs should I make up
|> them? The shack will be in the basement, and I'd like to run
|> a nice piece of coax up, with a remote antenna switch.

I'd suggest running 2.5" pvc as a cable run from your shack
to whatever "attic" you have and from there to the roof. For the bottom
end I ran my PVC into a regular double electrical box. That way you can
use std covers & fixtures. When you move just put a blank over it.

You may also want to run some cable from your office to your shack.

I'd also suggest running two phone lines into each room.

regards, Mike

1889. Hi Capacity NiCads (Radio Shack)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 18:14:13 UTC
From: ss@JH.Org
Message-ID: <30p29l$13b@snoopy.jh.org>
Source record: 117093

Can these batteries be charged in a normal NiCad charger
or do they require some increased current to charge properly
or timely?

If they require a different charger can someone point to or
email me a schematic??

Thanks!

--

Steve Steinberg ss@jh.org

The Space Below Intentionally Blank

1890. Re: LF regs?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 18:15:39 UTC
From: R0264@vmcms.csuohio.edu
Message-ID: <16FFBBA7F.R0264@vmcms.csuohio.edu>
Source record: 117075

In article <gregCtAw98.Art@netcom.com>
greg@netcom.com (Greg Bullough) writes:

>
>In article <Ct9z5F.54u@news.Hawaii.Edu> jeffrey@kahuna.tmc.edu (Jeffrey Herman) writes:
>>In article <Ct9KrJ.EGG@wb6hqk.uucp> bart@wb6hqk.uucp (Bart Rowlett) writes:
>>>
>>>Here is part 15.217 of the FCC regulations.
>>>
>>>15.217 Operation in the band 160 - 190 kHz
>>>
>>>(b) The total length of the transmission line, antenna, and ground lead
>>> (if used) shall not exceed 15 meters.
>>
>>Because of this particular limitation many experimenters place the
>>xmtr directly at the base of the antenna (no transmission line).
>
>It sort of surprised me that the little Lowfer rig in QST (April? '94)
>didn't have the rf portion out at the antenna. This seems like the most
>basic expedient for legal success on this band.
>
>Greg
Yes, and since it is best to use different rx and tx antennas, and the
rx antenna can be of any size or shape, it would just be the final rf
output stage out there, it seems, unless there is some problem in running
the coupling over long leads. In fact, Conner in the "Scrapbook" cited
in the article, describes some such arrangements, with the rf final
stage built right into the antenna structure. That "Scrapbook", by
the way, is a real delight. ------ Phil Emerson, aa8jo.

1891. THANKS!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 18:19:28 UTC
From: S965544@UMSLVMA.UMSL.EDU
Message-ID: <16FFBBB60.S965544@UMSLVMA.UMSL.EDU>
Source record: 117090

Just a note to say thanks. I recently posted a request for information, and I got all kinds of help. It's a pretty nice feeling to know that good people are still easy to find.

1892. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 18:50:56 UTC
From: chrise@comtrol.com
Message-ID: <CtCv0x.BH6@comtrol.com>
Source record: 117077

In article <1994Jul21.155538.4613@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>
>Now is also the time to install CATV and Ethernet cabling all
>over the house. Alarm wiring goes in now too. Run several extra
>twisted pairs into each room. These can be used for "smart
>house" connections in the future.
>
>Gary

Something I wish I had along these lines... is an individual run of
telco and CATV from each room to a central point (your wiring closet).
This allows you to put gadgets (home PBX, video switcher, bla, bla) in
this closet and send different things to different rooms. It's a pain
(or impossible) doing this when the telco is daisy chained from jack to
jack or the CATV has splitters hidden in the walls or the attic.

Chris
--
Chris Elmquist, N0JCF voice: (612)631-7614
chrise@comtrol.com fax: (612)631-8117

1893. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 20:07:39 UTC
From: Yves@g4udt.demon.co.uk
Message-ID: <774907659snz@g4udt.demon.co.uk>
Source record: 117083

I have used car gearbox oil in the past (I am talking of manual transmission oil. I also managed to obtain clear silicone oil once which is even better but hard to obtain.

Yves Remedios

1894. HELP-getting sticky velcro tape to stick?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 20:12:37 UTC
From: markeh@netcom.com
Message-ID: <markeh-220794121237@markeh.slip.netcom.com>
Source record: 117076
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Maybe someone here has some help for my problem. I have a mobile in my car, mounted in the trunk, with the control head stuck to the dash with sticky velcro tape. Well... not very sticky, since it keeps falling off.

I seem to have partially fixed the radio side of the problem, by using strips of tape long enough to extend around the end of the control head and wrap around the ends. But I havn't been able to solve the dash side of the problem - the tape unsticks, and falls off after a few days.

For several reasons, drilling holes is a poor solution, hence the velcro tape.

Any suggestions???

Help much appreciated,

73 Mark KM6FM

1895. Reply to FFT Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 20:36:02 UTC
From: mack@mails.imed.COM
Message-ID: <9406227749.AA774912962@mails.imed.com>
Source record: 117078

Here is a reply to the FFT question. I have taken many liberties here to simplify what REALLY happens. I have always considered Fourier transforms to be magic too!

Put simply an FFT is a numerical way of doing a Fourier transform(i.e. on acomputer). It sounds like you might also want to know how a Fourier transform is done. Any Fourier transform is a convolution of the sampling function and the data to be converted. For a continuous Fourier transform this invloves the multiplication and integration of a unit impulse and the data from -infinity to +infinity. A FFT is a numerical approximation of the integration process from -pi to +pi radians. Part of the magic is that the function used to do the convolution is a complex function whose value is sin(x)+jcos(x) (or some such. Look it up in a book). j is the EE way of saying imaginary (complex numbers).

This can be done in basic, because I have done it, but it isn't pretty. The problem comes from having to do complex arithmetic in a language that wasn't designed to do it. The other problem is that the shear number of multiplications and additions can cause a BASIC interpreter to run out of range in the numbers produced. A lot of BASIC's use 32 bit numbers for their floating point. There are books in most university libraries that will give you the algorithm for doing a FFT. I have found only one or 2 that make the algorithm understandable, though. The output of the FFT is TWO arrays of values! One is the real array of values and the other is the imaginary values. Usually, a program will convert the real and imaginary into magnitude and phase arrays (remember rectangular to polar conversions?) which are of more use to most engineering types.

I do this kind of stuff for a living and it still makes my brain hurt thinking of it.

The diagram you saw in the textbook illustrates something called a butterfly function, which takes advantage of the symmetry and duplication involved in doing a DFT when the number of samples is a power of 2.

I believe that there was an article or 2 in BYTE back in the early 80's on doing a FFT in basic. You could find those articles and use them as a guide, but beware that one of the articles has a program with bugs in it!.

> the samples have been magically replaced... How does it do that?

This is the definition of what a Fourier transform does. You can plot a periodic waveform as amplitude vs. time (-infinity to +infinity), or you can plot the component frequencies AND phases for all frequencies from -infinity to +infinity. BOTH representations describe the same physical phenomenon and they are exactly equivalent to each other.

An interesting example:

If you have studied any radio or electronics you may have heard that a square wave is composed of all of the odd harmonics of the fundamental frequency. This is only half of the picture. A square wave is:
sin(x)+ 1/3 sin(3x) + 1/5 sin(5x) + 1/7sin(7x) .....

If you instead combine:

sin(x) + 1/3 cos(3x) + 1/5 sin(5x) + 1/7 cos(7x) ......

you get an entirely different waveform with positive and negative spikes instead of a square wave. The FFT MAGNITUDE plot of the two waveforms is IDENTICAL, but the phase plots are different!

Ray Mack
WD5IFS (I Follow Skirts!)
mack@mails.imed.com

1896. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 22:07:27 UTC
From: richard.krum@msfc.nasa.gov
Message-ID: <30pfuv$kt8@hammer.msfc.nasa.gov>
Source record: 117079

In article <CtCv0x.BH6@comtrol.com>, chrise@comtrol.com (Chris Elmquist) says:
>
>In article <1994Jul21.155538.4613@ke4zv.atl.ga.us>,
>Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>>
>>Now is also the time to install CATV and Ethernet cabling all
>>over the house. Alarm wiring goes in now too. Run several extra
>>twisted pairs into each room. These can be used for "smart
>>house" connections in the future.
>>
>>Gary
>
>Something I wish I had along these lines... is an individual run of
>telco and CATV from each room to a central point (your wiring closet).
>This allows you to put gadgets (home PBX, video switcher, bla, bla) in
>this closet and send different things to different rooms. It's a pain
>(or impossible) doing this when the telco is daisy chained from jack to
>jack or the CATV has splitters hidden in the walls or the attic.
>
>Chris

Consider running extra twisted pairs in those TELCO lines, and run some
75 as well as 52 ohm coax. I also run a dedicated 20 amp circuit to each
location that I plan to place a computer or stereo gear. It assures cleaner
power. Run an "ordinary" outlet to the same area for lights and stuff. Keeps
the junk outta your computers.

BTW, the biggest pain in the butt was running 500 ft of thin ethernet, without
cutting it, through the entire house, looped through all the boxes.

Also run flex plastic conduit and boxes to your planned stereo speaker
locations in the family room. Your SO will like the lack of cables dangling all
over the place.

For sure pick out and use a wiring closet, and be sure to have a clear path to
the attic and basement and all other floors. Much easier to run new stuff. Daisy
chains for TELCO and TV also have so much line loss that you cannot get
good TV or phone lines.

Course, I hate sorting out all the wires when the house is finished. Markers always
seem to evaporate when I come in to hook stuff up. <sigh>

YMMV

--Rich, KE4GNK

1897. Re: Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 22:20:52 UTC
From: rdavis@nyx10.cs.du.edu
Message-ID: <30pgo4$773@nyx10.cs.du.edu>
Source record: 117080

os2user@vmdoug.utsd.att.com writes:

>I'm looking for a simple two-meter CW transmitter for use on RS-10. I
>can't use a crystal controlled transmitter because the protocol on RS-10
>requires that the two-meter uplink signal be changed slowly during
>the QSO so as to maintain a constant downlink frequency.

>Does anyone know of any plans, kits, schematics, or outright rigs-for-sa
e
>with a non-crystal controlled two meter CW transmitter?

>Doug KA2UPW
>doug@acpy01.utsd.att.com

>Above opinions are my own and not necessarily those of AT&T.

There are plenty of rigs around for sale.
For example, I would like to sell my Icom 202S (SSB/CW no FM) VXO
controlled rig. It puts out a couple of watts, and the VXO does a decent
job of covering the band 200 khz at a time.
But it seems I want way too much money for it, and since I don't _need_ to
sell it, it will likely remain here for quite some time.
All mode rigs show up at all the hamfests around here.
That is how I got the 202S and my Icom 251A a few years ago.
A 251A might cost $400 or so now, with the recent changes in the relative
value of the Yen and Dollar.

--
rdavis@nyx10.cs.du.edu Robert Davis Salina, KS
Amateur Radio K0FPC

1898. RF Network Analyzer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 23:50:43 UTC
From: russells@iconz.co.nz
Message-ID: <30pm0k$ko9@status.gen.nz>
Source record: 117081

[No readable article body recovered]

1899. Network Analyzer RF ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-22 23:55:56 UTC
From: russells@iconz.co.nz
Message-ID: <30pmac$ko9@status.gen.nz>
Source record: 117082

It seems to me that it should be possible to build an RF Network Analyzer
using just homemade hybrids, simple diode detectors, A-to-D converters
and software in a PC. I have perused lots of esoteric IEEE, etc articles
on the theory. Can anyone help with a reference to anything practical
that may have been published?

Frequency range of interest = 1 to 1000 MHz.

Russell (ZL1UYN)
russells@iconz.co.nz

1900. VHF/UHF Coax switches

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-23 01:44:58 UTC
From: beau@enterprise.america.com
Message-ID: <30psmq$cuj@enterprise.america.com>
Source record: 117084

I am looking for a standard relay that can be used at VHF frequencies.
Some of the commercial Amp/Preamp units on the market utilize such
relays as opposed to coaxial realys.

Any info on the manufacturer and or source of these type relays would
be appreciated.

```
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@enterprise.america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

1901. 'The masked capacitor unveiled' - Thanks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-23 02:27:30 UTC
From: tallath@hookup.net
Message-ID: <tallath.5.0002756A@hookup.net>
Source record: 117087

This is just a thanks to all those who responded to my query i.e. the article 'Who was that masked capacitor?'. The numerous responses I got gave me a colourful range of descriptions for the piston trimmer, as well as suggestions on where to get one (I even had one person offer to hunt in his batch of parts for one). This response just reinforced the theory I had that the ham community is a closely-knit group of very helpful individuals (which makes me glad I've only got a few weeks before I've got my licence).

Incidentally, I apologize for not posting this thank-you sooner, but when you're juggling a few things, sometimes one thing will get a little lost in the shuffle and keeping up with my mail/news was one of them.

Live long and propagate

1902. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-23 04:03:19 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul23.040319.426@ke4zv.atl.ga.us>
Source record: 117091

In article <30pfuv$kt8@hammer.msfc.nasa.gov> richard.krum@msfc.nasa.gov (Da Boss Troll) writes:
>
>Course, I hate sorting out all the wires when the house is finished. Markers always
>seem to evaporate when I come in to hook stuff up. <sigh>

Always put clear heatshrink over the wire numbers. That'll make them
stay on.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1903. Re: VHF/UHF Coax switches

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-23 04:13:02 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul23.041302.567@ke4zv.atl.ga.us>
Source record: 117092

In article <30psmq$cuj@enterprise.america.com> beau@enterprise.america.com (J. E. Winburn) writes:
> I am looking for a standard relay that can be used at VHF frequencies.
>Some of the commercial Amp/Preamp units on the market utilize such
>relays as opposed to coaxial realys.
>
>Any info on the manufacturer and or source of these type relays would
>be appreciated.

What you do is what the manufacturers do, you put the relay on a network analyzer, measure it's reactances, and absorb them into your circuit design. Most open frame relays can be made to work.

Note: the reactances will often differ considerably between the open and closed state of the relay. You can use this to your advantage with the proper circuit topology.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1904. Book Wanted: "Radiotron Designer's Handbook"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-23 05:33:25 UTC
From: T230579@UNIVSCVM.CSD.SCAROLINA.EDU
Message-ID: <16FFC15E6S85.T230579@UNIVSCVM.CSD.SCAROLINA.EDU>
Source record: 117088

Just wondering if anyone has a copy of Radiotron Designer's Handbook that they would be willing to part with for a reasonablr price. I like to collect pre-1945 electrical books and have a decent collection now. The book would go to a good home...

If replying, please make subject "Attn Dan"

Thanks!

Dan

1905. VHF/UHF Coax switch sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 00:45:33 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <m7wXPc4w165w@opus-ovh.spk.wa.us>
Source record: 117097

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

> In article <30psmq$cuj@enterprise.america.com> beau@enterprise.america.com (J
> > I am looking for a standard relay that can be used at VHF frequencies.
> >Any info on the manufacturer and or source of these type relays would
> >be appreciated.
>
> What you do is what the manufacturers do, you put the relay on a
> network analyzer, measure it's reactances, and absorb them into your
> circuit design. Most open frame relays can be made to work.

I have two coax relays that I am no longer using. Both are milled out
of solid metal and silver plated. As I remember, one is a 2-pole switch
and the other is a 6-pole switch. I'll check for exact specs if you're
interested. Connectors a BNC; does this imply VHF or lower frequency?

They're top-notch military surplus that I'll sell you for a cheap price.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

1906. Need schematic for Poor Man's Packet.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 02:25:59 UTC
From: ai351@leo.nmc.EDU
Message-ID: <9407240225.AA12792@leo.nmc.edu>
Source record: 117094

I would like to build the Poor Man's Packet modem, but I can't seem to find the August 1991 issue of 73 Magazine. Could someone either send me the schematic in PCX, ASCII, GIF, BMP, or some other computer readable form, or perhaps mail me a photocopy of the article? Thanks.

--
-=-
ai351@leo.nmc.edu David Brodbeck
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-

1907. Re: ATV transmitter plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 03:42:06 UTC
From: guru314708@aol.com
Message-ID: <30snue$9i8@search01.news.aol.com>
Source record: 117095

In article <2tqkg9$f8l@quartz.ucs.ualberta.ca>, reddy@ee.ualberta.ca (Reddy Praveen) writes:

Am not sure which magazine but check either Electronics Now or Popular Electronics magazine last month or so. they had a whole section dedicated to
ATV contruction projects.

1908. Dead Alinco ALX-2T HT Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 03:57:01 UTC
From: guru314708@aol.com
Message-ID: <30soqd$9qq@search01.news.aol.com>
Source record: 117096

I am in need of parts for a dead Alinco ALX-2T Handie Talkie. If any one has antoher dead or damaged unit out there I wuold like to buy it. Rig receives good but would like to get it on the air for a young ham to start on and Alinco does not have parts anymore for the old HT. The whole thing is surface mount inside and all I need is a few of the chips to get it going.

1909. Re: Hi Capacity NiCads (Radio Shack)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 06:10:40 UTC
From: andyfu@ix.netcom.com
Message-ID: <30t0l0$qis@ixnews1.ix.netcom.com>
Source record: 117098

In <30p29l$13b@snoopy.jh.org> ss@JH.Org (Steve Steinberg) writes:

>
>Can these batteries be charged in a normal NiCad charger
>or do they require some increased current to charge properly
>or timely?
>
>If they require a different charger can someone point to or
>email me a schematic??
>
>Thanks!
>
>--
>--
>Steve Steinberg ss@jh.org
>
> The Space Below Intentionally Blank
>

Steve,

You can charged the RS hi-capcity batteries in a normal charge but it will
take a bit longer. Radio Shack sells the hi-capacity charger for the batteries
and that is what I use.

The best charger for charging NiCads is a peak charger (using -dV/dT method). Maxxim
sells a chip that will do the job. Check your DigiKey catalog for that part.

Good Luck!

-Andy-
KE6GTF

1910. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 10:49:00 UTC
From: rmk@hit.sb.sub.de
Message-ID: <5TS88N6MAkB@hit42.hit.sb.sub.de>
Source record: 116950

SALU and GUTEN TAG from Germany!

Transformer oil is OK for building Dummy Loads or cooling any other
high-power resistance. But Tansformer oil, that is been fabricated
before the 1980's often contains PCB (policlorated biphenyle) wich
can dissociate to harmful poisons like Dioxine when heatin up or
burning.
73, Rainer (DB4VB)

--

CrossPoint v3.0 R

1911. Re: Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 13:02:33 UTC
From: kludge@netcom.com
Message-ID: <kludgeCtG48A.FHF@netcom.com>
Source record: 117099

In article <1994Jul21.181326.24439@devildog.att.com> doug@acpy01.utsd.att.com writes:
>I'm looking for a simple two-meter CW transmitter for use on RS-10. I
>can't use a crystal controlled transmitter because the protocol on RS-10
>requires that the two-meter uplink signal be changed slowly during
>the QSO so as to maintain a constant downlink frequency.

Frankly, I'm not impressed with my ability to build a VFO up at those
frequencies; it can probably be done with reasonable stability, but not
with my mechanical abilities.

How much of a change in frequency is the doppler going to produce? You
can actually get a rather substantial frequency change with a VCXO.... just
a padder cap that lets you change the loading on a crystal oscillator. It's
not going to tune the whole band, but it should be enough to compensate
for doppler, and it's stable and dirt cheap to build (assuming you can
get the crystals cheaply).
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1912. Re: HELP-getting sticky velcro tape to stick?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-24 19:37:01 UTC
From: wb3lgc@aol.com
Message-ID: <30ufst$prf@search01.news.aol.com>
Source record: 117100

In article <markeh-220794121237@markeh.slip.netcom.com>, markeh@netcom.com (MarkH) writes:

Maybe someone here has some help for my problem. I have a mobile in my car,
mounted in the trunk, with the control head stuck to the dash with sticky velcro tape. Well... not very sticky, since it keeps falling off.

WB3LGC:: Try RTV, I used some to stick a compass to the dash, it works fine. It comes in black, clear and white... My wife also used velcro/RTV to hold a skirt to the bathroom sink, it's been there at least 4 years.

73, Steve

1913. Re: Network Analyzer RF ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 03:08:09 UTC
From: blair@mksol.dseg.ti.com
Message-ID: <1994Jul25.030809.19812@mksol.dseg.ti.com>
Source record: 117102

Russell Smiley (russells@iconz.co.nz) wrote:
: It seems to me that it should be possible to build an RF Network Analyzer
: using just homemade hybrids, simple diode detectors, A-to-D converters
: and software in a PC. I have perused lots of esoteric IEEE, etc articles
: on the theory. Can anyone help with a reference to anything practical
: that may have been published?
: Frequency range of interest = 1 to 1000 MHz.

If you're not interested in the phase response it will be pretty
easy for an experienced ham to roll his own scalar
network analyzer. The reason HP charges $30K for
an instrument like you describe is the difficulty
in measuring phase with an accuracy of 1 degree or so.
Another difficulty is measuring the return loss (a
measure of VSWR). Again, if this isn't important it'll
be all the easier. You're best bet for information is
to scrounge a service manual for an HP 8505, 8753, or
8510. They will have schematics that will give you the basic
idea. This is assuming you've no interest in selling
your finished product since that would/should be illegal.
--
"Television is chewing gum for the eyes" - Frank Lloyd Wright
Dont forget to vote in news.announce.newgroups !
My views dont express those of my employer, etc., etc.

1914. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 04:20:32 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <30veig$ev8@hobbes.cc.uga.edu>
Source record: 117103

In article <FAUNT.94Jul21213733@netcom11.netcom.com> faunt@netcom11.netcom.com (Doug Faunt N6TQS 510-655-8604) writes:
>So, how much current at 220 is enough? Is a 20A 220V circuit enough,
>or should that circuit be pulled with #10 or #8?
>73, doug

I should think that a 4400-watt circuit would suffice for a kilowatt amplifier! Of course, if you're thinking resale, there's the possibility of your shack being turned into a woodworking shop, but I think 20A at 220V would suffice for that, too.

What you might want is several separate circuits, to allow a greater degree of isolation between pieces of equipment. Two 220V and two or three 120V, perhaps.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1915. Re: Two-meter satellite CW transmiter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 04:49:25 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.775111589@atl1>
Source record: 117104

I agree with Gary Koffman, you can pull a xtal controlled rig to work satellite. I would suggest you look for an AMECO TX-62 transmitter. They go for between $20 and $40 at hamfests. Some have a VFO with them. They put out about 30 watts which should be plenty to get into RS-10/11.

Good luck.

Jim Stafford, w4qo@america.net

1916. Re: VHF/UHF Coax switches

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 12:19:19 UTC
From: zlau@arrl.org
Message-ID: <1994Jul25.121919.23029@arrl.org>
Source record: 117114

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
: In article <30psmq$cuj@enterprise.america.com> beau@enterprise.america.com (J. E. Winburn) writes:
: > I am looking for a standard relay that can be used at VHF frequencies.
: >Some of the commercial Amp/Preamp units on the market utilize such
: >relays as opposed to coaxial realys.

: What you do is what the manufacturers do, you put the relay on a
: network analyzer, measure it's reactances, and absorb them into your
: circuit design. Most open frame relays can be made to work.

It is my experience that many manufacturers get by without exotic
equipment like network analyzers (those who sell to the competitive
amateur market).

I suspect that many merely add the relays to existing amps/preamps
and retune the matching circuits by hand, optimizing the preamp with
a NF meter and tweaking the power amp with a wattmeter. I'd love to
hear from manufacturers who actually do it differently. Incidentally,
it ought to be possible to build a pretty decent NF meter using the
noise source we published in QST, a precision attenuator to bring the
excess noise ratio down to 5 dB, and a AM receiver/DSP/computer setup.
(something I'd work on if I didn't have other neat ideas to work on...)

True, one of the better ways to design circuits is to completely
characterize the parts and then use expensive (new car priced)
computer models, but getting accurate VHF measurements on devices
like GaAs FETs is difficult. Anyone know what the noise parameters
on a MGF1801 are at 2 meters? And, even if you do get them, the
impedance is probably high enough that modeling is difficult--the
little stray reactances will skew the model.
: Note: the reactances will often differ considerably between the open
: and closed state of the relay. You can use this to your advantage
: with the proper circuit topology.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1917. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 13:55:03 UTC
From: jcw@kd4dts.atl.ga.us
Message-ID: <1994Jul25.135503.4357@kd4dts.atl.ga.us>
Source record: 117112

faunt@netcom11.netcom.com (Doug Faunt N6TQS 510-655-8604) writes:

I personally like to run wire thats 2-3 times more than you'll ever need. Wire is cheap, and so are circuit breakers. Having to re-pull if you decide you need more power is time consuming, and expensive once the walls are up.

I added outlets in my basement, and never use anything less than 12 gauge. The circuits are all rated for 20 amps, and that's primarily because I'm using standard service outlets. I also limit it to 3-4 outlets per 20 amp circuit.

Of course, some people say that if my house ever shifts on the foundation, I can straighten it up by torqueing the extra wiring I've added.

>So, how much current at 220 is enough? Is a 20A 220V circuit enough,
>or should that circuit be pulled with #10 or #8?
>73, doug
--

John C. Wren (kd4dts) | "The UNIX operating system has a command, NICE,
jcw@kd4dts.atl.ga.us | which allows a user to voluntarily reduce the
..!emory!wa4mei!kd4dts!jcw | priority of his process, in order to be nice to

1918. Mac Shareware

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 15:01:29 UTC
From: sdarragh@cisco.com
Message-ID: <sdarragh-250794083038@sdarragh-mac.cisco.com>
Source record: 117106

I am interested in finding a BBS I can download or someone that could send some Mac shareware for two things:

1. Morse program
2. Sample question asker for novice and tech

I would greatly appreciate any reposne!

Scott
sdarragh@cisco.com

1919. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 15:23:21 UTC
From: richard.krum@msfc.nasa.gov
Message-ID: <310ld9$3a4@hammer.msfc.nasa.gov>
Source record: 117105

In article <1994Jul23.040319.426@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) says:
>
>In article <30pfuv$kt8@hammer.msfc.nasa.gov> richard.krum@msfc.nasa.gov (Da Boss Troll) writes:
>>
>>Course, I hate sorting out all the wires when the house is finished. Markers always
>>seem to evaporate when I come in to hook stuff up. <sigh>
>
>Always put clear heatshrink over the wire numbers. That'll make them
>stay on.

Problem is that the drywall guy, the electricians, and the bricker all abuse the ends of the wires. I had better luck this time using color-coding tape.

I have also used some self-laminating markers that can be written on, then wrap around themselves to seal in the info.

Usually I just ring them out with a cheap RS digital ohmmeter with a continuity beeper in the basement, and a kid with a cheap walkie-talkie at the other end.

Whatever works!

--Rich, KE4GNK

1920. Re: Building a house: Special Considerations?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 15:45:15 UTC
From: tomb@lsid.hp.com
Message-ID: <CtI6FF.2G2@hpcvsnz.cv.hp.com>
Source record: 117107

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <30pfuv$kt8@hammer.msfc.nasa.gov> richard.krum@msfc.nasa.gov (Da Boss Troll) writes:
: >
: >Course, I hate sorting out all the wires when the house is finished. Markers always
: >seem to evaporate when I come in to hook stuff up. <sigh>

: Always put clear heatshrink over the wire numbers. That'll make them
: stay on.

Good idea, though labor-intensive. A couple alternatives to consider: wire markers with built-in protection (I have a roll of this stuff: white area for marking with a clear leader that covers the marking when wrapped around the wire), and simply writing directly on the wire with something like a "sharpie" magic marker. In gray or white pvc insulation, this becomes nearly indestructible, save cutting off the end of the wire. Of course, it doesn't work very well on Teflon insulated wire or for black-jacketed wire.

Does anyone make pre-numbered clear (since the numbers are going to be inside where they won't abrade off) heat-shrink sleeves? That would be very nice, requiring only a heat source to apply.

73, K7ITM

1921. RE: FM amp to operate on SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 16:38:45 UTC
From: dgordon@sadira.gb.nrao.edu
Message-ID: <CtI8wM.9o2@news.cv.nrao.edu>
Source record: 117108

I too am looking for information/help to put a 440 MHz
linear to be able to operate SSB with. Send info to:

dgordon@nrao.edu

Thanks - David - KB4LCI

1922. Re: RF Feedback in Mic while talking and touching mic.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 18:36:51 UTC
From: wells@fc.hp.com
Message-ID: <3110o3$hp1@tadpole.fc.hp.com>
Source record: 117109

Zack Lau (KH6CP) (zlau@arrl.org) wrote:
: John Wells WA0LHB (wells@fc.hp.com) wrote:

: : : >a 3.5" whip on top.
: : ^^^^

: I don't know what you are using, by punching the numbers in my HP
: calculator gives me a frequency of 843 MHz. Perhaps you are confusing
: feet with inches.

OOOOOOPs! My eyes get tired after reading notes all day ;-) Right you are!
~843 Mhz for 3 and a half inches.

: UK amateurs have had the 70 MHz for quite some time. I wonder how many
: remember the calls of the first stations to work crossband 50/70 MHz
: across the Atlantic?
Chris Schmidt who wrote the original posting is at the address of
<cschmidt@diralect.me.pvamu.edu> which I beleave is in the US so the discussion
of 70 mhz for US usage (TX) wouldn't apply..... or would it? ;-)

John WA0LHB

1923. Re: FM amp to operate on SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 21:41:40 UTC
From: glenne@n6gn.sr.hp.com
Message-ID: <CtIMxH.68D@srgenprp.sr.hp.com>
Source record: 117110

David Gordon (dgordon@sadira.gb.nrao.edu) wrote:
: I too am looking for information/help to put a 440 MHz
: linear to be able to operate SSB with. Send info to:

Apart from redesigning all class C stages (both match and operating point)
for linear service and building a suitable bias supply about the best I
can think of is:

insert enough carrier to bring no-audio output to around 10% of
peak and just use it that way. The hope is that the carrier will
bias the stage to enough linearity to let SSB through fairly well.

I wouldn't want to make a habit of using it that way without having
a look at the resulting spectrum first though.

Glenn Elmore n6gn

amateur IP: glenn@SantaRosa.ampr.org
Internet: glenne@sr.hp.com

1924. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 22:21:22 UTC
From: mack@ncifcrf.gov
Message-ID: <CtIorM.L0z@ncifcrf.gov>
Source record: 117111

In article <30kdq3$m4l@search01.news.aol.com> paulbreed@aol.com (PaulBreed) writes:
>I have seen many referances to QEX lately, and I don't know what it is
>about and who publishes it?
>
>Thanks in Advance
It's a short (24p about) publication by the ARRL, designed for
experimenters. It's the technical stuff that should be in QST
as far as I'm concerned, but the League has decided to cull out
those parts and publish them separately. It comes out every month.
Joe Mack NA3T
mack@ncifcrf.gov

1925. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-25 22:53:34 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Jul25185334@mipgsun.mipg.upenn.edu>
Source record: 117113

>It's a short (24p about) publication by the ARRL, designed for
>experimenters. It's the technical stuff that should be in QST
>as far as I'm concerned, but the League has decided to cull out
>those parts and publish them separately. It comes out every month.

If it is truly only 24 pgs, there is barely an excuse NOT to have it in QST. A typical QST is circa 240 pgs long. What is an extra 24 pgs? The existance of QEX can't be explained by the vast amount of material that won't fit into QST. The only possible excuse would be to get an additional subscription fee. If anything, the ARRL should be encouraging experimentation, not discouraging it. Well, c'est la vie.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

1926. How do you make an (old fashioned, real) radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 11:52:59 UTC
From: joe@erix.ericsson.se
Message-ID: <312ter$f81@euas20.eua.ericsson.se>
Source record: 116972

The other day I bought a "make you own radio set" for my 7 year old son.

This was a germanium crystal 'wind your own coil' type thing - unfortunately I couldn't get it to work. Much dissapointment - I promised to 'ask the net!'

Soon after this I saw in an exibition some 'home made' receivers built by prisoners of war in a world war 2 prisoner of war camp - these were made from old wine bottles, tin cans scraps of wire etc.

Now my question. How can I make a very simple radio (which works) from every day materials - are there any books papers etc. with tips on how to get these things going?

Can I improve on any of the 'trickey' parts the origonal designs with modern components?

Joe

1927. 144MHz X-mitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 12:20:57 UTC
From: gt4879a@prism.gatech.edu
Message-ID: <312v39$dhl@acmez.gatech.edu>
Source record: 117115

I need plans to build a tiny two meter transmitter that will operate in beacon operation on less than a watt. A ham friend and I plan to launch this transmitter in model rockets in order to do some experimenting with ham radio. I know that controllers for models that operate less than a watt don't require identification to be given. Would this apply in this situation? Please send me any ideas or references as to how I could build this device and if and how I will need to use it to transmit identification.

Thank You,
Joel Odom
--
Joel V. Odom KB5GWK + pi=~3.14159265358979323846264338327950
24879 Georgia Tech +++++ 28841971693993751058209749445923
Atlanta, GA 30332 + physics 07816406286208998628034825342117
gt4879a@prism.gatech.edu + major 06798214808651328230664 7....

1928. Telemetry frequencies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 14:02:36 UTC
From: andyb@access1.digex.net
Message-ID: <andyb.775231019@access1>
Source record: 117117

While waiting for my ticket to arrive, I've been designing a simple telemetry system to go onboard an R/C helicopter. My question is this - how do I handle the trade off of lower frequency equipment being easier to build at home vs. the benefit of having a full size antenna system on the helicopter. I started off thinking 50 MHz would be easy to work with until I got around to thinking about the antenna.

Any advice is welcome.../Andy

1929. Re: HELP-getting sticky velcro tape to stick?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 14:05:37 UTC
From: brett_miller@ccm.hf.intel.com
Message-ID: <brett_miller.410.000E1861@ccm.hf.intel.com>
Source record: 116981
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <markeh-220794121237@markeh.slip.netcom.com> markeh@netcom.com (MarkH) writes:
>Maybe someone here has some help for my problem. I have a mobile in my car,
>mounted in the trunk, with the control head stuck to the dash with sticky
>velcro tape. Well... not very sticky, since it keeps falling off.

>I seem to have partially fixed the radio side of the problem, by using
>strips of tape long enough to extend around the end of the control head and
>wrap around the ends. But I havn't been able to solve the dash side of the
>problem - the tape unsticks, and falls off after a few days.

I use some heavy duty velcro from Radio Shack. It is made of plastic. I
actually have it holding up my TM732A mobile which is stuck to the metal wall
behind the seat on my pickup. This stuff is really strong. I also use it to
hold the control head to the dash. I trimmed off some of the "hooks" because
the stuff is so strong it is hard to separate the two pieces.

Brett Miller N7OLQ brett_miller@ccm.hf.intel.com
Intel Corp.
American Fork, UT

1930. What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 14:14:41 UTC
From: charlos@rivm.nl
Message-ID: <CtJwwI.Muv@rivm.nl>
Source record: 116968

hello all,

I have built the loop antenna described in QST of May 94,
(works fine btw, tunes from 14-24 Mhz)
and want to add a stepper motor drive to tune the antenna.
I have found an old HP Thinkjet printer that has just the
stepper motor I need: it has a step size of 7.5 degrees
and combined with a small 1:6 gearbox I have it should do
allright.
The stepper motor (used in the printer for paper-feed)
is apparently controlled by an IC marked: 1858-0097-8610 .
My question is: what is this IC ?. Is it a HP part number ?.
Can anyone tell me what it is and what I can use to replace
it with ?

thanks and 73,
PA3CKR,

^^

Charlos Potma (charlos@rivm.nl)
RIVM - National Institute of Public Health and Environmental Protection
Laboratory for Air Research
Postbox 1, 3720 BA BILTHOVEN, the Netherlands
tel. ++31 30 743831, fax. ++31 30 287531
^^

1931. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 14:18:19 UTC
From: jma@ih4gp508.ih.att.com
Message-ID: <CtJx2K.BJM@nntpa.cb.att.com>
Source record: 117116

In article <YEE.94Jul25185334@mipgsun.mipg.upenn.edu>,
Conway Yee <yee@mipg.upenn.edu> wrote:
>>It's a short (24p about) publication by the ARRL, designed for
>>experimenters. It's the technical stuff that should be in QST
>>as far as I'm concerned, but the League has decided to cull out
>>those parts and publish them separately. It comes out every month.
>
>If it is truly only 24 pgs, there is barely an excuse NOT to have it
>in QST. A typical QST is circa 240 pgs long. What is an extra 24
>pgs? The existance of QEX can't be explained by the vast amount of
>material that won't fit into QST. The only possible excuse would be
>to get an additional subscription fee. If anything, the ARRL should
>be encouraging experimentation, not discouraging it. Well, c'est la
>vie.

Seems to me that they started it a little while after they started
selling lifetime subscriptions to QST. Always thought is was just a
scheme to for "revenue enhancement" to sell lifetime QST subscriptions
and then move the (advanced, technical) content of QST to QEX and keep
the _beginners'_ material in QST. Slick.
--
Ed Schaefer ham radio: K9JMA aviation: N97178

1932. Re: VHF/UHF Coax switches (Whaddabout Diodes?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 14:18:22 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <CtJx2M.6GK@yuma.ACNS.ColoState.EDU>
Source record: 116969

In article <1994Jul25.121919.23029@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>: In article <30psmq$cuj@enterprise.america.com> beau@enterprise.america.com (J. E. Winburn) writes:
>: > I am looking for a standard relay that can be used at VHF frequencies.
>: What you do is what the manufacturers do, you put the relay on a
>: network analyzer, measure it's reactances, and absorb them into your
>: circuit design. Most open frame relays can be made to work.
>It is my experience that many manufacturers get by without exotic
>equipment like network analyzers (those who sell to the competitive
>amateur market).

What about using diodes? How big should a diode be to switch (hold back) 100W on 2m? (How do you keep 100W of RF out of your GaAs FET Preamp?).
Just wondering,
Galen, KF0YJ

1933. Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 16:36:57 UTC
From: ep588deb@pts.mot.com
Message-ID: <CtK3HL.D06@pts.mot.com>
Source record: 116980
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I've got a Mixer question. I'm working on a single bipolar transistor mixer, downconverting from 900 MHz to 21.4 MHz. High side injection. I've got a 2-pole ceramic block filter on the input, so the image noise contribution is taken care of. Now, the question. I have noticed that the indicated noise figure (Using a HP 8970 Noise fig Meter) vary's by about 4 to 5 dB depending on the generator that I am using for the LO injection. the HP 8657 is the worst, followed by an 8644 at about 2 dB better, with an old cavity tuned 8640 the best, at 4 to 5 dB better than the 8657. My initial take on this is that this is due to the variation in Phase noise between the generators, but I'm not positive. MDS Simulations correllate with the results from the 8640, and I tend to think that those are the correct numbers (Besides, they are the best!) Is this due to the phase noise performance of the generators, or is there something else happening here?

David Bengtson 407-364-3806
Motorola No, I'm not speaking for Motorola
Mail Stop 98 If I was, I'd be making more money!
1500 NW 22nd Ave
Boynton Beach, FL 33626

1934. Re: FM amp to operate on SSB

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 16:38:55 UTC
From: zlau@arrl.org
Message-ID: <1994Jul26.163855.2916@arrl.org>
Source record: 116982

Glenn Elmore N6GN (glenne@n6gn.sr.hp.com) wrote:
: David Gordon (dgordon@sadira.gb.nrao.edu) wrote:
: : I too am looking for information/help to put a 440 MHz
: : linear to be able to operate SSB with. Send info to:

: Apart from redesigning all class C stages (both match and operating point)
: for linear service and building a suitable bias supply about the best I
: can think of is:

: insert enough carrier to bring no-audio output to around 10% of
: peak and just use it that way. The hope is that the carrier will
: bias the stage to enough linearity to let SSB through fairly well.

: I wouldn't want to make a habit of using it that way without having
: a look at the resulting spectrum first though.

I've had a fair amount of experience in designing linear amplifiers on most of the amateur bands through 10 GHz, including 432.

Glenn's suggestion may work. However, even this type of bias might be enough to cause the most serious problem--thermal runaway. What happens is the amp starts to draw more and more current, till the transistors blow up. The possible difficulty is that amplifiers tend to be pretty inefficient at low power outputs--it might be generating more heat at 10 percent of output than at 100 % of output because at full output the finals are acting as low loss switches, as opposed to lossy resistors.

Another big problem is stability. Some cheap class C amplifiers only put out a clean signal when injection locked to the input signal--the only time they are clean is when a big enough signal is present to overcome the inherant instability of the amplifier. Sometimes, installing just the right lossy resistors in the right spots will help. Stabilizing such amps can be real black magic.

Finally, the amount of intermodulation distortion can be fairly large. In other words, people might complain about how wide your signal is. As a rough rule of thumb, when you start to drive an amplifier past half the saturated output, your signal starts to get wide. Thus, a 20 watt "linear" amplifier may work great up to 10 watts, pretty good up to 15 watts, and splatter across the band at 20 watts.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

1935. Cold-switch relay voltage ratings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 18:29:31 UTC
From: btoback@netcom.com
Message-ID: <btobackCtK8p8.3L1@netcom.com>
Source record: 116971

The voltage and current ratings of relays are normally given with the assumption that the relay will be called upon to switch a circuit at that voltage while the rated current is flowing. Obviously, if a relay is switched "cold" it can handle higher voltages and currents.

Can someone give me an idea of how to calculate the maximum voltage rating of a relay that is cold-switched? It should be a function of the contact separation distance, assuming that the rest of the insulation on the relay is adequate to handle the voltage. I'm looking for a way to electronically bandswitch a high-power amplifier, and I'd rather not spend lots of money on vacuum relays if I can avoid it. Are mercury-displacement relays good for this kind of service? (How do you calculate the inductance of a pool of mercury, anyway?!)

Another related question: Does anyone have ideas for a safety interlock that would discharge the HV power supply capacitor faster than the bleeder alone (without causing an explosion!)? The time constant for a 35 uF capacitor and a 200K bleeder resistor is such that lethal voltages remain in the HV circuit for about 30 seconds after power is removed. I'd like to shorten this to a second or two if possible.

Thanks,
-- Bruce Toback
KN6MN

1936. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 18:35:00 UTC
From: ard@siva.bris.ac.uk
Message-ID: <26JUL199419355995@siva.bris.ac.uk>
Source record: 116970

In article <CtJwwI.Muv@rivm.nl>, charlos@rivm.nl (Charlos Potma) writes...
>
>The stepper motor (used in the printer for paper-feed)
>is apparently controlled by an IC marked: 1858-0097-8610 .
>My question is: what is this IC ?. Is it a HP part number ?.
>Can anyone tell me what it is and what I can use to replace
>it with ?

It _is_ an HP number, but may cross-reference to something more common. The only useful thing I can guess from that number is that it's a transistor array or darlington driver, or something like that. The 1858 numbers all seem to be, anyway.

The 8610 is a date code.

>
>thanks and 73,
>PA3CKR,

-tony

Bristol University takes no responsibility for the views expressed in this posting. They are the personal views of the user concerned.

1937. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:06:28 UTC
From: pauldoi@iastate.edu
Message-ID: <pauldoi.775256788@pv6d82.vincent.iastate.edu>
Source record: 116975

In <CtJwwI.Muv@rivm.nl> charlos@rivm.nl (Charlos Potma) writes:

>hello all,
[snip]
>The stepper motor (used in the printer for paper-feed)
>is apparently controlled by an IC marked: 1858-0097-8610 .
>My question is: what is this IC ?. Is it a HP part number ?.
>Can anyone tell me what it is and what I can use to replace
>it with ?

>thanks and 73,
>PA3CKR,

>^^
> Charlos Potma (charlos@rivm.nl)
>RIVM - National Institute of Public Health and Environmental Protection
> Laboratory for Air Research
> Postbox 1, 3720 BA BILTHOVEN, the Netherlands
> tel. ++31 30 743831, fax. ++31 30 287531
>^^

You might try HP's support numbers:
HP Support Materials Operation M-F 1400-0100 GMT 1-800-227-8164
HP Customer Information Center M-F 1400-0100 GMT 1-800-752-0900

Good Luck
Paul Doi
N0RWW
--
Paul E Doi
pauldoi@iastate.edu

1938. Re: Reply to thread about building a house

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:33:28 UTC
From: richard.krum@msfc.nasa.gov
Message-ID: <313vf8$4c7@hammer.msfc.nasa.gov>
Source record: 116976

In article <9406267752.AA775262763@mails.imed.com>, mack@mails.imed.COM (Mack Ray) says:
>
> In regards to prewiring a house:
>
> You gentlemen have missed one thing in deciding what wire to run. A
> 20 amp circuit is only rated to supply 15 amps in continuous duty.
> Just a little tidbit from the National Electrical Code (NEC (also a
> big Japanese company)). If you REALLY want 20 Amps you should run #10
> wire. If the run is especially long, you will want slightly larger
> wire to lessen the voltage sag, but you probably aren't running that
> much wire.

Yup. Need the 12ga wire to reduce voltage drop, and an isolated ground to reduce noise. Circuit is dedicated to one PC type computer only, about 10 amp draw absolute max. I have found the "negative resistance" characteristics and pulse noise from PC power supplies needs a dedicated circuit for reliability. The 12ga wire helps avoid voltage drops, and the dedicated circuit eliminates noise from other equipment. The "negative resistance" thing refers to the switching power supply tendency to draw a lot more current as voltage drops in a brownout. Heavy wire helps reduce voltage drop, and thus excessive current draw. The UPS handles the rest of the problem <grin>!

>
> Another thing to remember from the NEC is that YOU MUST NOT run RF
> cables, ethernet, phone, etc. in the same conduit as the electrical
> power!

Good point, both from legality and noise problems. Nothing is in conduit in the house---

>
> You should also check local codes against the suggestions for
> grounding where it applies to the power entry. The power company only
> has jurisdiction with the power part of the grounding though!.

Interesting enough, the grounding here has to be a driven ground rod in moist soil. None of that silliness of using a single piece of re-bar in the house slab!

*** Agreements deleted***>

> While you are adding lots of extra money to this house, you might also
> consider having fire sprinklers installed. Check with your insurance
> company to see if they give a substantial discount for having the

deletia

<sigh> The local code has no provisions for private household fire sprinklers. Stupid, but no can do here.

> While on the fire subject, don't forget to put smoke detectors
> EVERYWHERE. If you have small children, put one INSIDE each child's
> room. If (heaven forbid) they should decide to play with fire, they
> will most certainly close the door to do it. Having a smoke alarm
> inside the room gives you that much more warning (and peace of mind).
>

Even better, I have two independent circuits. One is the usual AC powered one, with the smoke detectors inter-connected, and placed where every bedroom can hear one/be covered. The other is a separate, battery-backed up UL listed alarm system with a set of smoke detectors on a special loop. Most electrical fires will take out the AC powered ones first. The alarm panel will wake us if the power does go off anyway

Should see the MASS of wire in the wiring closet--

--Rich, KE4GNK, Huntsville, Alabama..

1939. Re: SUMMARY DSP algorithms

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:43:00 UTC
From: btoback@netcom.com
Message-ID: <btobackCtKHnp.7r1@netcom.com>
Source record: 116978

In article <RgxSStq.vimx@delphi.com> vimx <vimx@delphi.com> writes:
> I have a somewhat irrelevant question about DSP algorithms.
>Would you be able to explain in simplest possible terms how a FFT or inverse
>is performed?
> In a textbook I saw a diagram of a FFT. The samples were added and subtracted
>from one another in an interesting pattern and occasionally multiplied by
>a "weighting function" ...

There is an excellent book called "Digital Signal Processing in Basic" --
the name of the author escapes me at the moment -- that answers all these
questions and more. It discusses the mathematics as well as providing
algorithms in Basic. If you, like me, find it easier to understand a
mathematical algorithm when you see both the math and the algorithm at
once, this is the book for you. It's about 200 pages, soft cover. I got
mine at Computer Literacy in San Jose. I may have the book at home; if
so, I'll post the rest of the details tomorrow.

-- Bruce KN6MN

1940. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:46:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E35852E@msmail.uthscsa.edu>
Source record: 116973

David write:

>I too am looking for information/help to put a 440 MHz
>linear to be able to operate SSB with. Send info to:
>
> dgordon@nrao.edu
>
>Thanks - David - KB4LCI

If it is truly a LINEAR amp, it will work find on SSB.
If it was for 440 FM it is probably not linear.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

1941. Reply to thread about building a house

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:46:03 UTC
From: mack@mails.imed.COM
Message-ID: <9406267752.AA775262763@mails.imed.com>
Source record: 116974

In regards to prewiring a house:

You gentlemen have missed one thing in deciding what wire to run. A 20 amp circuit is only rated to supply 15 amps in continuous duty. Just a little tidbit from the National Electrical Code (NEC (also a big Japanese company)). If you REALLY want 20 Amps you should run #10 wire. If the run is especially long, you will want slightly larger wire to lessen the voltage sag, but you probably aren't running that much wire.

Another thing to remember from the NEC is that YOU MUST NOT run RF cables, ethernet, phone, etc. in the same conduit as the electrical power!

You should also check local codes against the suggestions for grounding where it applies to the power entry. The power company only has jurisdiction with the power part of the grounding though!.

I second all the suggestions about adding PLENTY of circuits and other wiring. The suggestions about conduit out to the tower location are also very good.

I HAVE seen clear heat shrink with markers but I don't remember where. I suggest trying Grainger or other electrical supply places. This is not a new problem, so there are probably ready made solutions out there.

While you are adding lots of extra money to this house, you might also consider having fire sprinklers installed. Check with your insurance company to see if they give a substantial discount for having the house "fire-proofed". It may or may not be cost effective. I have friends whose houses have burnt down or been heavily damaged. Their experiences in the aftermath were very unpleasant. Just something to consider.

While on the fire subject, don't forget to put smoke detectors EVERYWHERE. If you have small children, put one INSIDE each child's room. If (heaven forbid) they should decide to play with fire, they will most certainly close the door to do it. Having a smoke alarm inside the room gives you that much more warning (and peace of mind).

Ray
WD5IFS
mack@mails.imed.com

1942. Heath SB-620 as a spectrum analyzer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:46:17 UTC
From: btoback@netcom.com
Message-ID: <btobackCtKHt5.87D@netcom.com>
Source record: 116979

Has anyone used a Heath SB-620 as a spectrum analyzer? I have the opportunity to buy one for $90, and I'd like a spectrum analyzer to check out filters, amplifiers, and so on. Is the SB-620 (that's the Scanalyzer) good for this sort of thing?

Thanks,
-- Bruce Toback
KN6MN

1943. Re: Electronic Chemical Blues

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-26 21:54:07 UTC
From: jimn0oct@aol.com
Message-ID: <3140lv$btr@search01.news.aol.com>
Source record: 116977

In article <Ct0Gv8.2vF@freenet.buffalo.edu>, aa450@freenet.buffalo.edu (Kurt Rieder) writes:

a bunch.....

Gee, thanks Kurt. Are you a chemist too? Enough people don't know about solvents etc. that it is always nice to point out the sometimes all-too-obvious: anything is dangerous if handled wrong. Thanks again

Entropy ain't what it used to be.....

jim n0oct

1944. Hamcom interface for HP 100LX Palmtop?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 04:58:53 UTC
From: jwill@cabell.vcu.edu
Message-ID: <1994Jul27.045853.24464@cabell.vcu.edu>
Source record: 116983

Anybody out there been successful in making a Hamcom Op Amp interface that works on the HP 100LX serial port? I tried building one with the LM741 and got no joy, even after using external power to the chip. I found that if I tried to turn the HP 100LX off while running HamCom, it would not respond and HamCom would freeze up requiring a warm boot. <sigh>

Seems a shame too: I would really like to use the HP100LX and my portable shortwave (Sony SW7600 retrofitted with a Sony 2010 Narrow filter) together for RTTY and AMTOR monitoring while traveling.

Robert S. Williams

1945. DSP Algorithm Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 04:59:29 UTC
From: btoback@netcom.com
Message-ID: <btobackCtL1v5.Ksn@netcom.com>
Source record: 116984

I've lost the original post from the person who wanted the information
about digital signal processing algorithms in Basic, but here's
the book:

BASIC Digital Signal Processing
G.B. Lockhart & B.M.G. Cheetham
Butterworths, 1989

Again, an excellent book on both DSP theory and implementation of
DSP algorithms, using BASIC as the implementation language.

-- Bruce Toback
KN6MN

1946. HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 05:57:26 UTC
From: drew@trl.oz.au
Message-ID: <drew.149.0@trl.oz.au>
Source record: 116985

A few weeks ago there was some discussion about "why so many impedances for coax cable". It was an interesting thread. And somebody gave a pretty good explanation of why 50 ohms became a common "standard" and attributed it to (I think) the US Navy- which may have caused all the other users to fall into line.

I would like to know more about this subject. If we look at radio text books pre WW 2, coax hardly gets a mention, 600 ohm open-wire was all the go. After WW 2 the books are full of coax. Was it simply the impetus of war which pushed the use of coax? Or were there other factors?

73 Drew, VK3XU. Telecom Australia Research Laboratories.

1947. Re: Rolling my own Transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 07:07:37 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCtL7sp.5py@netcom.com>
Source record: 116986

Did this way back when (when men walked on the Moon). If memory serves, measure the height of the stack of e laminations. And measure the width of the center leg of one of the e's. Along the axis parallel to the way the adjacent I's run. use these 2 numbers to calculate an area, the area of the center core. Number of primary turns (for 120V 60Hz) P(turns) = 800/(center core area). this assumes you used inches to measure. then do a ratio to get the needed turns for your secondary(s).

If old windings exist, you could count as you remove them, and get the turns per volt ratio. If the primary is in good shape, you could just re-do the secondary.

1948. Cyprus (IC Designs) PLL chip, no external analog stuff, programmable

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 07:27:54 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCtL8qI.7o9@netcom.com>
Source record: 116987

At work, getting started on a circuit and system design that requires
a PLL oscillator. Found what looks like a really good chip, made
by Cyperus (or a subsidery "IC Designs"). The only external stuff you
need is a crystal (like 1 to 20MHz or so) or external clock, and a
source of serial bit stream to program the chip every power-up (loading
registers). All that yucky analog stuff is inside the chip, so you
don't have to mess with loop filters (poles, zeros and all that).
The output can cover the HF to low VHF frequencies. And it costs
something like $2.60 (forgot if that's large quantities or not, usually
oneies-twosies is at most 2-3x that). Looks like I could make a QRP
rig that I could get many channels from (frequencies are in small steps).
Or a small 6M beacon.

Got some samples, going to see how it really works. If it's a simple
digital design, I might post how to do it. In a few weeks.
xxx 2061 was part number, forgot the prefix.

1949. Re: Dummy Load Oil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 07:35:15 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCtL92r.8GJ@netcom.com>
Source record: 116988

About 20 years ago, you used to be able to go down to the local friendly power company, and the would give you some used transformer oil. Which turned out to be PCBs (yea, the stuff that causes cancer). Maybe some dioxen in there too. Those Heathkit cantennas didn't seal real well, and the oil would leak out some, and get on your hands sometimes. I used to say "ick", and wipe my hand on my shirt. I suppose I recieved more than my minimum adult daily requirement for PCB's and Dioxen.

1950. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 14:46:27 UTC
From: rdavis@nyx10.cs.du.edu
Message-ID: <315s03$am1@nyx10.cs.du.edu>
Source record: 116990

drew@trl.oz.au (Drew Diamond) writes:

>A few weeks ago there was some discussion about "why so many impedances
or
>coax cable". It was an interesting thread. And somebody gave a pretty
>good explanation of why 50 ohms became a common "standard" and attribute

>it to (I think) the US Navy- which may have caused all the other users t

>fall into line.
>
>I would like to know more about this subject. If we look at radio text
>books pre WW 2, coax hardly gets a mention, 600 ohm open-wire was all
>the go. After WW 2 the books are full of coax. Was it simply the impetus
of
>war which pushed the use of coax? Or were there other factors?

>73 Drew, VK3XU. Telecom Australia Research Laboratories.

I don't have references available, but the word RADAR seems to me to be
all the exlanation needed for coax.
And radar was a WW II invention.

--
rdavis@nyx10.cs.du.edu Robert Davis Salina, KS
Amateur Radio K0FPC

1951. Re: Cyprus (IC Designs) PLL chip, no external analog stuff, programmable

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 14:49:24 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <315s5k$s7c@hobbes.cc.uga.edu>
Source record: 116989

Robert Casey (wa2ise@netcom.com) wrote:
: At work, getting started on a circuit and system design that requires
: a PLL oscillator. Found what looks like a really good chip, made
: by Cyperus (or a subsidery "IC Designs"). The only external stuff you
: need is a crystal (like 1 to 20MHz or so) or external clock, and a
: source of serial bit stream to program the chip every power-up (loading
: registers). All that yucky analog stuff is inside the chip, so you
: don't have to mess with loop filters (poles, zeros and all that).
..

Cyperus, Cyprus, Cypress, Cyrix, or what exactly was their name?
^^^^^^^
There are enough companies with similar names that an exact spelling
is needed -- and if you could also post the part number I'd really
appreciate it.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

1952. Re: Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 15:16:55 UTC
From: donc@qwert.sr.hp.com
Message-ID: <CtLuG8.oH@srgenprp.sr.hp.com>
Source record: 116991
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

DAVID BENGTSON X2711 P7798 (ep588deb@pts.mot.com) wrote:
: I've got a Mixer question. I'm working on a single bipolar transistor mixer,
: downconverting from 900 MHz to 21.4 MHz. High side injection. I've got a
: 2-pole ceramic block filter on the input, so the image noise contribution is
: taken care of. Now, the question. I have noticed that the indicated noise figure
: (Using a HP 8970 Noise fig Meter) vary's by about 4 to 5 dB depending on the
: generator that I am using for the LO injection. the HP 8657 is the worst,
: followed by an 8644 at about 2 dB better, with an old cavity tuned 8640 the
: best, at 4 to 5 dB better than the 8657. My initial take on this is that
: this is due to the variation in Phase noise between the generators, but I'm not positive.
MDS Simulations correllate with the results from the 8640, and I tend to
: think that those are the correct numbers (Besides, they are the best!) Is this
: due to the phase noise performance of the generators, or is there something
: else happening here?

Since you are using a single bipolar transistor mixer, AM noise on the
LO signal offset +-21.4 Mhz from the carrier can mix down to your IF.
The variations you see are due to differences in the noise of the
generators, although at 21.4 Mhz offset, I wouldn't call it phase noise;
the AM component of the noise is responsible.

To improve your performance, you could filter the LO, limit the LO (which
would strip off the AM noise), or switch to a single or double balanced
mixer topology.

Don Cook

1953. Re: RSGB BOOK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 15:55:00 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <CtLw7o.20u@hpqmoea.sqf.hp.com>
Source record: 116992

Zack Lau (KH6CP) (zlau@arrl.org) wrote:

: Yes, and the complexity of electronics makes it that much harder. Actually,
: it isn't so much the fact that it is complex, but the fact that some people
: do in fact have an amazingly deep grasp of their province of it.
: Thus, the challenge is accurately conveying that expertise, without
: misleading people.

I'm not sure it's really that much harder. Systems have become an awful lot bigger, beyond what anyone could imagine. The basic blocks of those systems are pretty much as digestible as ever. People take fright at the size of the system, and never realise that you don't have to understand it all at once. Most amateurs are happy enough with individual blocks like, say, a VCO, but never become comfortable with the concept of taking an overall view in the most general way of the operation of the synthesiser that the VCO is one part of. This is easy to do, the problem is one of overcoming aversion, so many people say " That's too complicated for me" that almost everybody has been fooled into beieving them.
It is sadly ironical that circuit "simplicity" is seen as parts count. I know of some cases where a redesign allowing more components can produce a circuit that is easier to get going. I get a cold shudder when I see some circuit described as "Simple" if I can see that it needs careful selection of parts to get it going, and someone at least as smart as the designer to be able to adjust it.

One challenge for an author covering one of the classic "Frightener" type subjects is to persuade the readers not to run away to another subject, to convince them that they not only can understand the material, but can also exploit it to their advantage. I've always found that university exam questions on filters and control theory are generally set easier than the rest. I guess the professors in those fields are just so glad to get someone selecting their question that they want to reward them !

: For instance, Dr. Rhode recently remarked upon the
: clipping diode used in an FET oscillator which resulted in a whole bunch of
: erroneous conclusions by the amateur community. I can say that I have no
: intention of attempting to improve the phase noise of an oscillator
: circuit is probably superior to that found in most transceivers today.

I got to read the Rohde's full manuscript because of my handbook involvement, but haven't read the published version, and haven't come across the conclusions referred to - has everyone gone berserk clipping diodes? or have diodes in oscillators become anathema?

Ulrich's analysis of simplistic oscillator level control should be an
eye-opener, everyone has taken something for granted for too long, but
remember that these sorts of design mistakes crop up in the VCOs of
synthesisers, and the phase noise disadvantage can still spoil things
there. Give me a quieter phase noise VCO, and I can play with the
trade-offs to exploit it to get a cleaner synthesiser.

: Nor do some authors appreciate the attempts at a conversion. I know of
: at least one well published author who says he carefully crafts every
: word, and doesn't want changes. Not surprisingly, most of his articles
: were published in a magazine that did little editing.

I know it's not me, but my ears were burning.... I wonder what the
handbook process will do to my English English prose and spelling ?

: Interestingly, I'd say the introduction of the computer into the hamshack has
: apparently had little effect on the amount of articles being written for
: amateur magazines. It has enabled a few authors to write rather lengthy
: articles :-).

So that's why my ears felt hot !

: Zack Lau KH6CP/1 2 way QRP WAS
: Internet: zlau@arrl.org 10 grids on 2304 MHz

Oh, Zack, some time ago I spoke to 'RJV - the ARRL should be
getting a wodge of back issues of Sprat, and a regular courtesy copy for
the library. Has anything arrived, yet?

Cheers
David

1954. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 16:15:32 UTC
From: btoback@netcom.com
Message-ID: <btobackCtLx5w.MB5@netcom.com>
Source record: 116994

In article <CtJwwI.Muv@rivm.nl> charlos@rivm.nl (Charlos Potma) writes:
>I have built the loop antenna described in QST of May 94,
>(works fine btw, tunes from 14-24 Mhz)
>and want to add a stepper motor drive to tune the antenna.
>I have found an old HP Thinkjet printer that has just the
>stepper motor I need: it has a step size of 7.5 degrees
>and combined with a small 1:6 gearbox I have it should do
>allright.
>The stepper motor (used in the printer for paper-feed)
>is apparently controlled by an IC marked: 1858-0097-8610 .
>My question is: what is this IC ?. Is it a HP part number ?.
>Can anyone tell me what it is and what I can use to replace
>it with ?

You can call your local HP office to get the telephone number of
the European parts center -- I think it's in Boeblingen, Germany.
The parts center will be able to give you more information.

HP designs a lot of proprietary parts for their low-cost printers
in order to get the most use out of their mechanical parts. I'm not
sure about the paper feed stepper in the ThinkJet. If all else
fails, you could just leave the printer circuitry connected and
control your tuning capacitor with PCL. Heck, it'd be easy if you
get the gear ratios right: <esc>&a+5R to go up 5 KHz, <esc>&a-2R
to go down 2 KHz, etc. :-)

-- Bruce Toback
KN6MN

1955. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 16:51:10 UTC
From: jbloom@arrl.org
Message-ID: <1994Jul27.165110.27282@arrl.org>
Source record: 117004

Conway Yee (yee@mipg.upenn.edu) wrote:
: >It's a short (24p about) publication by the ARRL, designed for
: >experimenters. It's the technical stuff that should be in QST
: >as far as I'm concerned, but the League has decided to cull out
: >those parts and publish them separately. It comes out every month.

: If it is truly only 24 pgs, there is barely an excuse NOT to have it
: in QST. A typical QST is circa 240 pgs long. What is an extra 24
: pgs? The existance of QEX can't be explained by the vast amount of
: material that won't fit into QST. The only possible excuse would be
: to get an additional subscription fee. If anything, the ARRL should
: be encouraging experimentation, not discouraging it. Well, c'est la
: vie.

Let's see... we create a magazine specifically to cater to the needs of the amateur experimenter, and that's viewed by some as discouraging experimentation. How strange. I guess we're also discouraging them by publishing the digital/VHF/Microwave conference proceedings, since those aren't in QST, either. Our publishing of National Contest Journal must be an attempt to discourage contesting, too.

In fact, QEX is 32 pages each month. If we thought it would be a good idea to put that material in QST--and we don't--we'd have to come up with about the same number of pages of additional QST advertising to pay for it. From where, I don't know. Might have to raise membership dues, too.

The reason why we put a particular article in QEX instead of QST has to do with the audience we think the material serves. What is the benefit of putting into a magazine that goes to 170,000 readers material that might interest only a fraction of a percent of them? That would be criminally wasteful. The advantage of running material in QEX is that it is targeted to the particular community that will find it of interest. And because the production costs of QEX are substantially lower than those of QST, we can afford to give more pages to an article, expanding with text and figures as needed. That's particularly important with technical articles.

The technical material we put in QST is designed to meet the needs and interests of a broad spectrum of readers, including weekend project builders. The articles in QEX, on the other hand, are intended particularly for people who are _developing_ circuits, procedures and algorithms. Those people are a small minority of the 170,000 who read QST.

At $12/year (for ARRL members in the US), I think QEX is a bargain.
(I'm prejudiced, of course--I edit QEX.) I don't expect QEX income will
ever exceed its expenses. We'd like QEX to break even, of course, but
we don't mind continuing to lose money on it (a moderate amount,
anyway) because it serves its intended purpose of providing a forum for
experimenters.
--
Jon Bloom KE3Z jbloom@arrl.org

1956. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 17:03:40 UTC
From: kchen@apple.com
Message-ID: <31641c$89s@apple.com>
Source record: 116995

mjsilva@ted.win.net (Michael Silva) writes:
>
>In article <30kdq3$m4l@search01.news.aol.com>, PaulBreed (paulbreed@aol.com) writes:
>>I have seen many referances to QEX lately, and I don't know what it is
>>about and who publishes it?
>>
>It's a small (30-some pages), technical publication published monthly by
>the ARRL. $12 a year, if I remember correctly. Look in a QST for
>subscription info.

I don't know why the ARRL keeps QEX such a hidden secret. I have yet to find mention of it in the multi-page "publications" advertisments which the ARRL regularly places in QST.

I find it amazing to find "CQ Ghost Ship" prominantly listed and not QEX. Someone in the marketing department must have a warped sense of priority.

Call up the ARRL at 203-666-1541 (I've always found the "666" part humourous :-) to subscribe.

For ARRL members in the U.S., it is $12 for a year's worth of monthly issues. Cost $24 to non-members. The masthead names Cathy Stepina as being in charge of QEX Circulation.

For those in the great white north (eh?) and south of the border, it is $25 for members and $37 for non-members. Price goes up to $60 (urgh!) for non-ARRL members elsewhere.

No, there are no contest results, RACES rantings, gossips about school teachers, rumours of DXpeditions, or Hams-in-jail in the pages of QEX.

However, if you like building gear, it is worth a subscription. The articles are not written so that you can copy the designs, but more of the flavor of seeding you with new ideas.

The last couple of issues each had an article by Ulrich Rohde on oscillator phase noise and in the issue that just came out, he discussed the measurment of receiver intermod performance.

In this past year, articles have included DSP methods for doing Weaver ("third method") SSB generation, RX bridges, machine detection of CW buried in noise, nifty uses of MMICs,....

The editor is Jon Bloom, who regularly contributes to rec.radio.amateur. Perhaps he can arm twist the marketeers at the ARRL to start including

QEX among the other publications in the QST ads.

Perhaps Jon could also submit a table of contents each month to rec.radio.amateur.

Oh, yeah, if you like QEX, you'll love Communications Quarterly. Ads for that can be regularly found in the CQ Magazine.

73,

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

1957. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 18:12:12 UTC
From: btoback@netcom.com
Message-ID: <btobackCtM2KC.JA6@netcom.com>
Source record: 116996

In article <315s03$am1@nyx10.cs.du.edu> rdavis@nyx10.cs.du.edu (Robert Davis) writes:
>drew@trl.oz.au (Drew Diamond) writes:
>>I would like to know more about this subject. If we look at radio text
>>books pre WW 2, coax hardly gets a mention, 600 ohm open-wire was all
>>the go. After WW 2 the books are full of coax. Was it simply the impetus
>of
>>war which pushed the use of coax? Or were there other factors?
>
>I don't have references available, but the word RADAR seems to me to be
>all the exlanation needed for coax.
>And radar was a WW II invention.
>

Microwave radar uses (and used) waveguide rather than coax, and WW II radar advanced pretty quickly from the first 10 meter systems to 10cm systems. The impetus was almost certainly the convenience of coax when you don't have time to get everything right for balanced line. You can bury it, run it through metal ducts, stomp on it, and generally mistreat it without seriously impairing its performance; balanced lines require much more care.

Radar, incidentally, was not a WW II invention. Microwave radar, which permitted much more accuracy in ranging and much higher target resolution, was the real "secret weapon" but lower-frequency systems had been in use since the 1930s. It's just that they were so limited in capability that nobody gave them much credence.

-- Bruce KN6MN

1958. RE: Ham-Homebrew Digest V94 #211

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 18:50:16 UTC
From: wlfuqu00@convex.cc.UKy.EDU
Message-ID: <46219.wlfuqu00@pop.uky.edu>
Source record: 116993

In message Wed, 27 Jul 94 04:30:24 PDT,

> Date: 26 Jul 1994 11:52:59 GMT
> From:
> ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!
> convex!cnn.exu.ericsson.se!erinews.ericsson.se!eua.ericsson.se!erix.erics
> son.se!joe@network.ucsd.edu Subject: How do you make an (old fashioned,
> real) radio? To: ham-homebrew@ucsd.edu
>
> The other day I bought a "make you own radio set" for my 7 year
> old son.
>
> This was a germanium crystal 'wind your own coil' type thing -
> unfortunately I couldn't get it to work. Much dissapointment - I
> promised to 'ask the net!'
>

> Joe

One problem may be your headphone. Most headphones used today are
low-impedance. You need a sensitive high-z set for a crystal radio.
These are available from :
Antique Electronic Supply
6221 S. Maple Ave.
Tempe, AZ 85283
Phone (602) 820-5411

The Headphones are expensive however a crystal earphone is much cheaper.
If you do use a crystal earphone put a 47Kohm or 100Kohm resistor across it
to provide a D.C. path for current. If you don't it may not work. Some of
these earphones had a resistor built in. But I don't think they come that
way now.
They also have crystal radio kits.
Bill Fuqua
ko4ww

1959. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 20:27:40 UTC
From: haynes@cats.ucsc.edu
Message-ID: <316fvs$dq5@darkstar.UCSC.EDU>
Source record: 116997

In article <drew.149.0@trl.oz.au>, Drew Diamond <drew@trl.oz.au> wrote:
>I would like to know more about this subject. If we look at radio text
>books pre WW 2, coax hardly gets a mention, 600 ohm open-wire was all
>the go. After WW 2 the books are full of coax. Was it simply the impetus of
>war which pushed the use of coax? Or were there other factors?

I don't know - I'll just give some speculation...

There was certainly a lot of brainpower that went into antennas and
transmission lines in connection with the war. Both radar and VHF/UHF
radio became big technologies in the period. (contrast with the first
ham to operate on the then 56mc band; he had to remove the bakelite
bases from his tubes to reduce lead length and losses)

When was polyethylene developed? I remember having some WWII-vintage coax
that was insulated with some other compound, which seemed to have many
of the properties of chewing-gum. And I remember seeing some rubber-insulated
coax, which probably wasn't very appealing at RF either. So to get
flexible coax you need a good insulating material. In the days of open-wire
line we didn't have polyethylene twin-lead either.

A number of years ago I was at a science conference where one of the speakers
was a chemistry professor - Prof. Park of Colorado at the time and had
previously worked for DuPont. He told about inventing/discovering Teflon.
He was a lifelong worker with fluorocarbons. He had made some
tetrafluoroethylene gas and stored it in a steel gas cylinder. His boss
wasn't enthusiastic about that particular line of research, so they put
the gas cylinder aside and worked on some other things.

Later he had some occasion to want to do something with the gas again, so
he found the cylinder. When he opened the valve nothing came out. The
first assumption was that the valve was plugged up, so they put the cylinder
into liquid air (I guess to liquefy or freeze the gas inside, so it wouldn't
be under pressure) and unscrewed the valve from the cylinder. Still nothing
came out, so he sawed the cylinder open with a hacksaw. Inside was this
white solid material, polytetrafluoroethylene. His boss was mad because he
had ruined a perfectly good gas cylinder...
--
haynes@cats.ucsc.edu

"Ya can talk all ya wanna, but it's dif'rent than it was!"
"No it aint! But ya gotta know the territory!"
Meredith Willson: "The Music Man"

1960. Re: HELP-getting sticky velcro tape to stick?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 20:45:19 UTC
From: jackson@longlast.cs.nyu.edu
Message-ID: <316h0v$pai@thecourier.cims.nyu.edu>
Source record: 117003
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

```
|> I trimmed off some of the "hooks" because
|> the stuff is so strong it is hard to separate the two pieces.
|>
|>
|> Brett Miller N7OLQ brett_miller@ccm.hf.intel.com
|> Intel Corp.
|> American Fork, UT
```

I may be wrong, but I interpreted the stickyness problem
to be in the glue of the piece attached to the dash.. in which
case I would suggest lightly sanding (at least not armor-alling)
the area where you are trying to get it to stay. I too use
Radio Shack "hook and loop" tape, but I don't know if it's
heavy duty. Of course, it's only holding a Pro34 vertically
which might not put too much stress on the hold.

Remember the golden rule of velcro, the more area covered on
both surfaces, the better the hold.

--
Steven Jackson, Assistant to the Chair of Computer Science
Courant Institute of Mathematical Sciences, New York University
251 Mercer Street, NY NY 10012

Work <-- (forwarded) Home
jackson@cs.nyu.edu, jcksnste@acfcluster.nyu.edu, sjackson@cjbbs.com

1961. MAX713 Nicad charge controller

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 20:55:38 UTC
From: bsn@ziggy.ph.utexas.edu
Message-ID: <316hka$h9o@geraldo.cc.utexas.edu>
Source record: 116999

Does anyone have a schematic for a nicad charger built around the
MAX713 nicad fast charge controller chip?

Thanks,
Barry W5KH

1962. Re: Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 20:57:20 UTC
From: jdow@BIX.com
Message-ID: <jdow.775342640@BIX.com>
Source record: 117007
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

donc@qwert.sr.hp.com (Don Cook) writes:

>DAVID BENGTSON X2711 P7798 (ep588deb@pts.mot.com) wrote:
>: I've got a Mixer question. I'm working on a single bipolar transistor mixer,
>: downconverting from 900 MHz to 21.4 MHz. High side injection. I've got a
>: 2-pole ceramic block filter on the input, so the image noise contribution is
>: taken care of. Now, the question. I have noticed that the indicated noise figure
>: (Using a HP 8970 Noise fig Meter) vary's by about 4 to 5 dB depending on the
>: generator that I am using for the LO injection. the HP 8657 is the worst,
>: followed by an 8644 at about 2 dB better, with an old cavity tuned 8640 the
>: best, at 4 to 5 dB better than the 8657. My initial take on this is that
>: this is due to the variation in Phase noise between the generators, but I'm not
positive. MDS Simulations correllate with the results from the 8640, and I tend to
>: think that those are the correct numbers (Besides, they are the best!) Is this
>: due to the phase noise performance of the generators, or is there something
>: else happening here?

>Since you are using a single bipolar transistor mixer, AM noise on the
>LO signal offset +-21.4 Mhz from the carrier can mix down to your IF.
>The variations you see are due to differences in the noise of the
>generators, although at 21.4 Mhz offset, I wouldn't call it phase noise;
>the AM component of the noise is responsible.

>To improve your performance, you could filter the LO, limit the LO (which
>would strip off the AM noise), or switch to a single or double balanced
>mixer topology.

>Don Cook

Don, all I suspect limiting would do to either generator is reduce the noise
content on the skirts by maybe 3dB unless there is a strange AGC network that
is many MHz wide at work introducing noise. Some generators DO have leveling
circuitry that is not filtered that could cause this. I'd be hard pressed to
believe this in an HP generator of recent vintage. A narrow band filter is
a better solution. It'll knock the noise sidebands on the test oscillator down
to reasonable proportions. (This exercise DOES point out how important GOOD
oscillator design is in mixers.)

<^_^> Joanne Dow, Amiga Exchange Editor
jdow@bix.com

1963. Super CMOS keyer 2, Source code?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 21:09:45 UTC
From: ed@fore.com
Message-ID: <CtMAs9.C3x@fore.com>
Source record: 116998

I am wanting to build a keyer. I saw in 94 ARRL handbook the super cmos keyer 2. It was based on a Mot microcontroller. It did not reference the software or source code for it, only where to get a preprogrammed chip. Is it available via any ftp sites or is it proprietary?

Has anybody done anything similar that is not proprietary?

Ed N3SDO
Ed@fore.com

1964. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 21:33:48 UTC
From: raymonda@uranium.EBay.Sun.COM
Message-ID: <316jrs$32e@male.EBay.Sun.COM>
Source record: 117000

In article JA6@netcom.com, btoback@netcom.com (Bruce Toback) writes:

... text deleted ...
.>
.>Microwave radar uses (and used) waveguide rather than coax, and WW II radar
^^
.>advanced pretty quickly from the first 10 meter systems to 10cm systems.
.>The impetus was almost certainly the convenience of coax when you don't
.>have time to get everything right for balanced line. You can bury it,
.>run it through metal ducts, stomp on it, and generally mistreat it without
.>seriously impairing its performance; balanced lines require much more
.>care.
.>
... text deleted ...

.>-- Bruce KN6MN
.>
.>

Yes RADAR primarily uses waveguide for the microwave transmission lines,
however if you've ever looked at one of those old WWII radar sets you'll
see lots and lots of coax patch cords tying together all the rack mounted
sub-assemblies and such.

-Ray WB6TPU
raymonda@uranium.ebay.sun.com

1965. 1750 meter band

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-27 21:58:06 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CtMD0v.1tH@news.Hawaii.Edu>
Source record: 117001

There were some questions about the 1750M band; here's some info
about that band as provided by ham-server@grafex.sbay.org.

Jeff NH6IL
jeffrey@math.hawaii.edu

****************begin included text********************************

------------- cut here -----------------
>Subject: SUMMARY: Yes there is a 1750 Meter band
>Date: Sun, 07 Jun 1992 21:30:26 -0700
>Lines: 145

Organization: Employer not involved in this.

As requested by several people, here is a collection of highlights
of the replies I recieved to "Does 1750 meters really exist". It
looks like one of the replies was from a FAQ list, but since I got
several requests to summarize, I'll go ahead and consume the
bandwidth.

Many thanks to all that took the time to reply. And many thanks
to all those who caught the error in my .sig. I guess I'll go
listen to the tapes some more :-).

Thanks again.

73s,
jerryp@key.amdahl.com
KC6RTO
-=

>From alan@dsd.es.com Wed Jun 3 06:43:44 1992
(K6X0)
...yes, Virginia, there is a real citizen's band between
160 and 190 KHz. The limitations are: one watt output power, and
the antenna can be no longer than 50 feet including the feedline.
There are some serious experimenters using the band for propagation
studies and so on, but there is lots of room for CW signals. You
may hear several beacons operating there 24 hours a day. There is
a newsletter, but I do not know who publishes it. Other than the
power and antenna restrictions, as far as I know anything goes.
To my knowledge there is no commercially made equipment available
for this band - virtually everyone builds their own transmitters,
and most of the modern receivers will tune down on that band. I
listen there once in a while with my TS-930 but have never been
interested in transmitting there. Good luck.

****

(KC6WUG)

...FCC part 15 (no license) 1750 meter band: 160-190 KHz. 1 watt max
input power. 15 meter maximum lenght of antenna + feedline. With
those power and antenna restrictions you don't get much range.

****

>From jkearman@arrl.org Fri Jun 5 07:55:06 1992
(KR1S) ^^^^
|------(AhHA! - So much for the benign neglect theory --
JRP)

JP: Well, shucks. We have run articles about this band in the past.
I guess we should do it again. The band runs from 160-190 kHz. You're
allowed 1-watt output, total length/height of antenna including
feed line is 50 ft (max allowed by law). Most folks put the xmtr
right at the base of the antenna.

You can join the Longwave Club of America, which was organized in
1974 to promote DXing and experimentation on frequencies below
550 kHz and activity on the 1750 meter band. Membership in the
LWCA and a one-year subscription to The LOWDOWN is $12.00 by
First Class Mail. Please make all remittances payable to the
Longwave Club, and mail to LWCA, 45 Wildflower Rd., Levittown,
PA 19057. [Direct quote from the LOWDOWN]

(See, we READ it here!)

The LOWDOWN is published monthly. Good luck and 73,

****

>From: pdh@netcom.com (Phil Howard)
(KA9WGN)

Depending on your effective bandwidth, you can extend it. I've read
about very slow digital going something like 1000 to 2000 km.

****

As promised, here's the summary of the information I requested
from the net a couple weeks ago regarding the 1750 meter band.

Does one need a license to operate on this band? No. This means that
you can choose your own callsign although callsigns are not required.

What is this band for? Experimentation mainly. It is especially fun to
attempt QRP operation and one respondent said that given the right type
of modulation and antenna setup, signals can travel 1000 miles or more
with just under one watt output! Lots of folks use CW beacons and there is
a radio club called The Lowfers (Low Frequency Users, presumedly). Be
aware that this IS NOT a ham band although several LF receiver manu-
facturers boast that their units can "receive the 1750-meter ham band".

You will not find discussion of this band in the ARRL publications
BECAUSE it is not a ham band. Perhaps some of the confusion here arises
from the use by LF operators of ham radio callsigns. Many hams also
operate in this band and use their own calls for identification, even
though, as mentioned above, a callsign is not required here.

What is the frequency limits of this band? The 1750 meter band spans
from 160 to 190 KHz.

What types of modulation may be employed? You may use CW and AM voice.
You may be allowed others (FM, RTTY, etc). But the data I was able to
gether was sketchy on this point. One person though said that there
are no restrictions on modulation methods.

What are the legal power limits and other transmitter-related
restrictions? Transmitter power is limited to somewhat less than one
watt output. The maximum power INPUT to the final should not exceed one
watt. The length of the antenna added to the length of the feedline
MAY NOT exceed 50 feet. Spurious emissions outside the band must be
60db below the signal strength at the carrier frequency.

Who may use the band? Anyone, so long as they comply with the above
regulations.

Where can I get more definitive and detailed information on this band?
The band is discussed in Part 15 of the Code of Federal Regulations which
you can pick up at your local library (assuming it is a fairly big
library),
or you can order it from the nearest US Government Bookstore. If any-
one knows where such a store is, please post its location. I'd like
to snag a copy of Part 15 myself.

Thanks to alan@dsd.es.com, kludge@grissom.larc.nasa.gov,
kc2wz!bob%fdurt1@uunet.UU.NET, brown@hpspkla.spk.hp.com, markz@ssc.wa.com,
and gary@ke4zv.uucp for all the information they provided.

Happy Lowfering! :-)

****

1966. Re: Cyprus (IC Designs) PLL chip, no external analog stuff, programmable

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 00:20:56 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCtMJMw.45o@netcom.com>
Source record: 117002

In article <315s5k$s7c@hobbes.cc.uga.edu> mcovingt@aisun3.ai.uga.edu (Michael Covington) writes:
>Cyperus, Cyprus, Cypress, Cyrix, or what exactly was their name?
> ^^^^^^^
>There are enough companies with similar names that an exact spelling
>is needed -- and if you could also post the part number I'd really
>appreciate it.
>
It's Cypress, IC Designs Division, part number ICD2061a. Also another
is ICD2051

408-943-2600

they're in the Cypress "Timing Technology Products" book

1967. Re: Cyprus (IC Designs) PLL chip, no extern

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 03:13:23 UTC
From: myers@spot.West.Sun.COM
Message-ID: <3177oj$kcf@abyss.West.Sun.COM>
Source record: 117012

In article 45o@netcom.com, wa2ise@netcom.com (Robert Casey) writes:
>In article <315s5k$s7c@hobbes.cc.uga.edu> mcovingt@aisun3.ai.uga.edu (Michael Covington) writes:
>>Cyperus, Cyprus, Cypress, Cyrix, or what exactly was their name?
>> ^^^^^^^
>>There are enough companies with similar names that an exact spelling
>>is needed -- and if you could also post the part number I'd really
>>appreciate it.
>>
>It's Cypress, IC Designs Division, part number ICD2061a. Also another
>is ICD2051
>
>408-943-2600
>
>they're in the Cypress "Timing Technology Products" book

I wonder what kind of noise performance this part sports. Be sure to figure out what it uses for a reference frequency, and look for the reference sidebands. If the reference frequency is very high, the sidebands would be far removed from the primary output frequency.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* This Extra supports the abolition of the 13 and 20 WPM tests *

1968. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 04:37:24 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Jul28003724@mipgsun.mipg.upenn.edu>
Source record: 117005

>Let's see... we create a magazine specifically to cater to the needs
>of the amateur experimenter, and that's viewed by some as discouraging
>experimentation. How strange.

Good point. I didn't think of it in this way.

>In fact, QEX is 32 pages each month. If we thought it would be a good
>idea to put that material in QST--and we don't--we'd have to come up
>with about the same number of pages of additional QST advertising to
>pay for it. From where, I don't know. Might have to raise membership
>dues, too.

Does QEX contain advertising? If it is a solid 32 pages per month and
another 32 would be needed in advertising, the additional 64 pages
would be a significant increase in the size of QST. I admit that the
increased costs could justify leaving it out.

>The reason why we put a particular article in QEX instead of QST has
>to do with the audience we think the material serves. What is the
>benefit of putting into a magazine that goes to 170,000 readers
>material that might interest only a fraction of a percent of them?
>That would be criminally wasteful. The advantage of running material
>in QEX is that it is targeted to the particular community that will
>find it of interest.

This, doesn't quite ring true. The new ham section also targets a
fraction of the audience albeit probably a larger fraction than the
technical crowd.

No matter what the article is about, it targets a fraction of the ham
audience. Many for instance, do not build projects at all.

Further, the ARRL is supposed to be an organization for all hams. Why
discriminate against the hackers?

>At $12/year (for ARRL members in the US), I think QEX is a bargain.

Well then the cost for QEX isn't $12 per year but rather $30+$12 = $42
for ARRL members and $24 (?) for non-members.

The question shouldn't be if $12 is a bargain but rather whether
$24-$42 is a bargain. Is it? I don't know.

>(I'm prejudiced, of course--I edit QEX.)

Thanks for the honesty in the matter. It is much appreciated and
certainly a cut above the integrity that is typical on USENET.

Of course, there remains the question of why nobody hears about QEX outside of the ARRL community. Further, even inside the ARRL, QEX is rarely discussed. The ARRL doesn't seem to market it well either in QST or in supplementary mailings.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
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1969. DSP for the HOMEBREWER??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 05:44:20 UTC
From: n9rzc@uiuc.edu
Message-ID: <n9rzc-2807940047130001@ruger-42.slip.uiuc.edu>
Source record: 117006

Hello everyone,

This may have passed around here a bit, I'm sorry that my work keeps me away from this news group too much, but then again, I wouldn't be able to be sitting here if I didn't work for food :)

-I was wondering if there were schematics/plans/kits out there for DSP filters (that would work as a DSP for Ham uses)

I really don't know that much about DSP, and have this great DSP chip that I am not willing to part with. I can get the specs/schematics etc from the company that makes this chip, but as for the rest of the circuitry I am purely stuck. (and I don't want to pay the $700 that the company wants for their fancy smancy dsp board- heck, all I want is an input, and an output- not a fregeebers HP workstation interface for the dsp- it'd be neat I guess, but I just don't need it right now).

SOOooo, I guess I would love to hear from anyone concerning kits, plans, schematics, articles, and personal advice.

I have enjoyed this group quite a bit, and more importantly, I have recieved a bunch of GREAT advice/help from everyone in the past, so I know this is the place to ask about this, especially because I am completely knew to HF, and especially DSP.

THANKS A TON TO EVERYONE AHEAD OF TIME!!!!

73!
Allen Hall n9rzc@uiuc.edu

ps- I'll try to catch the responses on this group, but I would really appreciate e-mail if you can, since I really have a hard time getting to the net nowadays (finals are upon us again!)

1970. MGF1200

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 08:05:43 UTC
From: M.Willis@ee.SUrrey.ac.UK
Message-ID: <9407280905.aa14709@olympus.ee.surrey.ac.uk>
Source record: 117009

I have an old SSB electronics 2.3 GHz transvertor. The front end FET is US so I need to replace it. The original design used an MFG1200. Now I don't seem to be able to find one of these. I have replaced it with an ATF10135, but I am experiencing instability as it has more HF gain. Would an MGF1302 be more appropriate? Alternatively, where can one find MGF1200s?

73 Mike G0MJW

1971. PMP to BAYCOM Packet modem conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 11:16:37 UTC
From: ei938@cleveland.Freenet.Edu
Message-ID: <31842l$a1j@usenet.INS.CWRU.Edu>
Source record: 117008

Ham Folks!
Does anyone know how to convert a standard Poor Mans Packet (PMP) to use
a serial port like the BAYCOM modem? This is essential to use the PMP
for TCPIP and NOS like I plan to. I know it can be done, and I have seen it
before, but do not have the plans. Where are they? Can someone help me out
on this?

THANK YOU THANK YOU THANK YOU!!!

Andrew Lynch
alynch@wpgate1.wpafb.af.mil

73

PS, I just got my PMP to connect to the packet BBS using a Ramsey kit radio.
WOW What rush!! I remember when these were stacks of parts on the workbench!!

1972. Re: Telemetry frequencies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 12:06:05 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul28.120605.4085@ke4zv.atl.ga.us>
Source record: 117014

In article <andyb.775231019@access1> andyb@access1.digex.net (Andy Harrah) writes:
>While waiting for my ticket to arrive, I've been designing a simple telemetry
>system to go onboard an R/C helicopter. My question is this - how do I
>handle the trade off of lower frequency equipment being easier to build at
>home vs. the benefit of having a full size antenna system on the helicopter.
>I started off thinking 50 MHz would be easy to work with until I got around
>to thinking about the antenna.
>
>Any advice is welcome.../Andy

Actually, I think you'll find that it's *easier* to build the equipment
at higher frequencies than at lower frequencies. That's because there
are unconditionally stable packaged ICs available that make the job rather
mundane. Building RF equipment with discrete components in the upper HF and
lower VHF range is usually *much* more difficult than building equipment at
UHF and microwave where packaged components like MMICs are widely and cheaply
available, and where relatively small stripline or cavity resonators are
practical. Trying to tame strays and parasitics at upper HF and lower VHF
in discrete designs can be a real bear.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1973. Re: VHF/UHF Coax switches (Whaddabout Diodes?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 12:15:31 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul28.121531.4226@ke4zv.atl.ga.us>
Source record: 117015

In article <CtJx2M.6GK@yuma.ACNS.ColoState.EDU> galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:
>What about using diodes? How big should a diode be to switch (hold back)
>100W on 2m? (How do you keep 100W of RF out of your GaAs FET Preamp?).
>Just wondering,
>Galen, KF0YJ

Sure, you can use PIN diode switches instead of relays. *Matched* 100 watt switches are practical. However, to emulate the double pole double throw relays used to switch an inline amp is a bit more complicated than just doing a TR switch. If you don't need the switching speed, the relays remain simpler and cheaper.

Your switching bias has to be stronger than the RF signal in order to keep a diode switch in the OFF state. That becomes a bit challenging at the 100 watt level where the RF voltage can be 70.7 V RMS with unity SWR. If SWR rises, the voltage needed can become ridiculous.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1974. Re: Heath SB-620 as a spectrum analyzer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 12:20:03 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul28.122003.4360@ke4zv.atl.ga.us>
Source record: 117016

In article <btobackCtKHt5.87D@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>Has anyone used a Heath SB-620 as a spectrum analyzer? I have the opportunity
>to buy one for $90, and I'd like a spectrum analyzer to check out filters,
>amplifiers, and so on. Is the SB-620 (that's the Scanalyzer) good for this
>sort of thing?

This unit is a *panadapter* designed to work at the IF frequency of
Heath receivers. The achievable dispersion is limited by the IF
selectivity of the receiver. If the receiver tunes the frequency
range that you need to test your amplifiers or filters, and if the
dispersion allowed by the receiver is sufficient, it can be pressed
into service. However, for amplifiers, you'd like a wide enough
dispersion to show fundamental and harmonics of an amplifier. I
sincerely doubt you could make the SB-620 do that.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1975. Re: 144MHz X-mitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 12:45:09 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Jul28.124509.4679@ke4zv.atl.ga.us>
Source record: 117010

In article <312v39$dhl@acmez.gatech.edu> gt4879a@prism.gatech.edu (Joel Van Odom) writes:
>I need plans to build a tiny two meter transmitter that will operate in
>beacon operation on less than a watt. A ham friend and I plan to launch
>this transmitter in model rockets in order to do some experimenting with
>ham radio. I know that controllers for models that operate less than a
>watt don't require identification to be given. Would this apply in this
>situation? Please send me any ideas or references as to how I could build
>this device and if and how I will need to use it to transmit identification.

Use the MC2833, Joel. It's a single chip FM transmitter with about 10 mW
output. That should be sufficient unless these rockets are *really* big.
Motorola has an app note available that will give the details needed to
make a transmitter with this chip.

97.215 only waives the ID requirement if you are transmitting *to* a
model for telecommand purposes. To transmit *from* a model for telemetry
purposes, you have to follow the ID rules. There are custom chips available
that will generate a MCW ID on contact closure. They're intended to be
mounted inside rigs so you can ID a stolen rig if you hear it on the air.
Look for the ad in QST. Or, if you're going to have a data acquisition
system to format the telemetry anyway, you can program the microcontroller
to also generate an ID for you. If you use ASCII telemetry, the callsign
can be included in ASCII, and an ordinary modem used for decoding.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

1976. Re: 1750 meter band

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 14:06:59 UTC
From: domonkos@access.digex.net
Message-ID: <eXwDkiubG-XD066yn@access.digex.net>
Source record: 117011

Although I can't recall who at the moment there are kit manufacturers that provide complete transceive and transverter operations.

There is a well known Canadian 'Lowfer' that operates a coherent CW beacon and was featured on SPECTRUM (the weekend Radio Show about the radio hobby and is heard weekly 10:00PM Saturday on 5.810 Mhz). The coherent CW signal has en equivalent 1Kw erp (legal, since it's coherent CW). For more info on this technology refer to the ARRL publications.

Andy

1977. Preferred Ferrite Cores List

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 18:11:39 UTC
From: danbl@hprnd.rose.hp.com
Message-ID: <318scr$oj4@hpchase.rose.hp.com>
Source record: 116918

Sometime back, someone had posted a list of Amidon Cores that were particularly common (such as T50-2, etc.). Did anyone keep a copy of this ?

Daniel Blakley kb6mhn

1978. Cb --> 10m anyone help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 18:17:11 UTC
From: sdarragh@cisco.com
Message-ID: <sdarragh-280794114630@sdarragh-mac.cisco.com>
Source record: 117017

Does anyone know how or have specs on converting a USB/LSB CB to a 10M
radio?
I would like to use this as a mobile backup unit.

Scott

1979. 2m or tri band

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 18:26:16 UTC
From: sdarragh@cisco.com
Message-ID: <sdarragh-280794115535@sdarragh-mac.cisco.com>
Source record: 116921

I am looking for a used 2m mobile or (tri band) preferrably a Yaesu or
Kenwood anyone got any they are selling?

Scott

1980. Re: Heath SB-620 as a spectrum analyzer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 18:30:56 UTC
From: btoback@netcom.com
Message-ID: <btobackCtny3M.BAM@netcom.com>
Source record: 116925

In article <1994Jul28.122003.4360@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <btobackCtKHt5.87D@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>>Has anyone used a Heath SB-620 as a spectrum analyzer? I have the opportunity
>>to buy one for $90, and I'd like a spectrum analyzer to check out filters,
>>amplifiers, and so on. Is the SB-620 (that's the Scanalyzer) good for this
>>sort of thing?
>
>This unit is a *panadapter* designed to work at the IF frequency of
>Heath receivers. The achievable dispersion is limited by the IF
>selectivity of the receiver.

The SB-620 *can* be used as a spectrum analyzer; there's a switch on the back that changes between "panadaptor" mode and spectrum analyzer mode. It can be adapted for many different IF frequencies, not just those used by Heath; in fact, the components and instructions for this are included with the kit. (I built one a _very_ long time ago.) So if anyone has one of these beasts and has used it in spectrum analyzer mode, I'd like to find out how well it works.

-- Bruce KN6MN

1981. Ham Brew Mag?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 18:42:00 UTC
From: lakeith@robins.af.mil
Message-ID: <318u5o$gqi@wrdis02.robins.af.mil>
Source record: 116924

What's happening with with Ham Brew mag? Is anyone receiving it?
What do you think?

73,

Larry, KQ4BY

1982. Re: Heath SB-620 as a spectrum analyzer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 19:03:42 UTC
From: kludge@netcom.com
Message-ID: <kludgeCtnzM7.9py@netcom.com>
Source record: 117013

In article <1994Jul28.122003.4360@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <btobackCtKHt5.87D@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>>Has anyone used a Heath SB-620 as a spectrum analyzer? I have the opportunity
>>to buy one for $90, and I'd like a spectrum analyzer to check out filters,
>>amplifiers, and so on. Is the SB-620 (that's the Scanalyzer) good for this
>>sort of thing?
>
>This unit is a *panadapter* designed to work at the IF frequency of
>Heath receivers. The achievable dispersion is limited by the IF
>selectivity of the receiver. If the receiver tunes the frequency

Actually, it also has a spectrum analyzer mode, although I don't see anyone using it much. This requires an external RF source to inject, along with the signal. They are beat together internally to form an IF which is then displayed.

It's crude and cheap, but you can pick them up for $50 at hamfests all the time. $90 is too much... I got mine for $20 at the Frostfest.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

1983. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-28 19:51:12 UTC
From: ylo@anubis.kbfi.ee
Message-ID: <31927g$3c0@peak.edu.ee>
Source record: 116919

Conway Yee (yee@mipg.upenn.edu) wrote:

> Of course, there remains the question of why nobody hears about QEX
> outside of the ARRL community. Further, even inside the ARRL, QEX is
> rarely discussed. The ARRL doesn't seem to market it well either in
> QST or in supplementary mailings.

Have you ever tried to find QEX in Europe? I have :-(

Ylo Mets,

Institute of Chemical Physics & Biophysics,
Tallinn,
Estonia.

1984. IC chip help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 00:29:44 UTC
From: jim_reynante@cpqm.saic.COM
Message-ID: <199407291554.IAA02853@ucsd.edu>
Source record: 116926

IC chip help
I'm trying to develop a circuit that uses the output signal lines from a CMOS IC
chip to drive a group relays (5 total) in an automatic antenna switching unit.
The problem is that the level of the output signals from the chip are too low to
directly drive the coils of the relays (they need 5V @ 200-300 mA). One solution
that I have come up with is to feed the chip's output signals to a group of
switching transisitors used to drive the relay coils.

Does anyone know of a chip that I could use to replace the group of
transistors ?

73 de Jim, KD6GLF
Internet: jim_reynante@cpqm.saic.com
Packet: KD6GLF @ WB6CYT.CA.USA.NOAM

1985. Re: Cb --> 10m anyone help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 02:27:22 UTC
From: dave@eram.esi.com.au
Message-ID: <319pea$hft@eram.esi.com.au>
Source record: 116920

In article <sdarragh-280794114630@sdarragh-mac.cisco.com>,
sdarragh@cisco.com (Scott Darragh) writes:

| Does anyone know how or have specs on converting a USB/LSB CB to a 10M
| radio?

It would help if you described the thing!

--
Dave Horsfall (VK2KFU) VK2KFU @ VK2AAB.NSW.AUS.OC PGP 2.6
dave@esi.COM.AU Opinions expressed are mine. available

1986. Re: Cb --> 10m anyone help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 06:35:06 UTC
From: drew@trl.oz.au
Message-ID: <drew.150.0@trl.oz.au>
Source record: 116923

In article <sdarragh-280794114630@sdarragh-mac.cisco.com> sdarragh@cisco.com (Scott Darragh) writes:
>From: sdarragh@cisco.com (Scott Darragh)
>Subject: Cb --> 10m anyone help?
>Date: 28 Jul 1994 18:17:11 GMT
>Does anyone know how or have specs on converting a USB/LSB CB to a 10M
>radio?
>I would like to use this as a mobile backup unit.
>
>
>Scott

Scott, there have been several descriptions of modifying 27 MHz CB's to 28 MHz. A quick look through my collection of stuff has located;

"Inexpensive SSB for 10 M" - "modify this CB for 10-meter needs"

by Phil Salas AD5X- in HAM RADIO Magazine June '90.

Phil describes how to modfy a Cobra model 146GTL. Fully detailled. He makes it look simple.

73, Drew, VK3XU Telecom Australia Research Laboratories.

1987. Re: MAX713 Nicad charge controller

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 07:20:14 UTC
From: Collier_Chun@ccm.hf.intel.com
Message-ID: <Collier_Chun.19.0007568C@ccm.hf.intel.com>
Source record: 116929

In article <316hka$h9o@geraldo.cc.utexas.edu> bsn@ziggy.ph.utexas.edu () writes:

>Does anyone have a schematic for a nicad charger built around the
>MAX713 nicad fast charge controller chip?

I have the data sheet for the '713 here. They say that you can call
1-800-998-8800 for free samples or literature.

I proto'ed the '713 up, and tried it out. While it worked in concept, I felt
that it allowed the battery packs to get too hot before the peak-sensing
circuit kicked out the fast charge current.

I'm going to use an ICS chip next, which uses the patented reverse pulse
charging technology. This method is supposedly better for NiCads, and is
claimed to about double the number of charge/discharge cycles you can get from
a battery pack. I'll wait until I see my own results before I believe or
disbelieve this.

1988. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 08:28:08 UTC
From: wvanho@infinet.com
Message-ID: <31aeio$miv@rigel.infinet.com>
Source record: 116922

: I don't have references available, but the word RADAR seems to me to be
: all the exlanation needed for coax.
: And radar was a WW II invention.

: --
: rdavis@nyx10.cs.du.edu Robert Davis Salina, KS
: Amateur Radio K0FPC

I think you are right that an invention made coax popular, but it was the invention (or rather the commercial production) of polyethylene that made it economically and technically practical. It was the first CHEAP, flexible, extrudable plastic available suitable for the task. (Nylon was in wide use for fibers, polystyrene was commonly molded, and cellulose (rayon, cellophane) had been around for years, but is not really a plastic.

There were coax cables available in the late '30's that were made from copper tubing and wire, hand-assembled using polystyrene beads for spacers. Needless to say, they were not widely used by amateurs!

-- 73, Van - W8UOF

* *
* It ain't wot ya don't know 't gets ya into trouble. *
* It's wot ya know 't ain't true. - "Mr. Dooley" *
* *

wvanho@infinet.com

1989. Re: Reply to thread about building a house

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 16:08:58 UTC
From: stewart@anl.gov
Message-ID: <stewart.4.000A2656@anl.gov>
Source record: 116930

>Yup. Need the 12ga wire to reduce voltage drop, and an isolated ground to
>reduce noise. Circuit is dedicated to one PC type computer only, about 10 amp
>draw absolute max. I have found the "negative resistance" characteristics and
>pulse noise from PC power supplies needs a dedicated circuit for reliability. The
>12ga wire helps avoid voltage drops, and the dedicated circuit eliminates noise
>from other equipment. The "negative resistance" thing refers to the switching
>power supply tendency to draw a lot more current as voltage drops in a brownout.
>Heavy wire helps reduce voltage drop, and thus excessive current draw. The
>UPS handles the rest of the problem <grin>!

Good suggestion on the PC (switching) power supplies. However, be careful
about the ground. An ground which is indepenent of the ground/neutral bond
(located at the distribution panel) could create a nice ground loop. Most
modern Ham gear has a separate RF ground and safety ground (since most is 12
VDC), but this is not the case with tube based gear. Follow NEC to the letter
on grounding, and avoiding the ground loops. They are a real pain.

1990. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 17:57:52 UTC
From: charlier@lsid.hp.com
Message-ID: <Ctpr8G.HC4@hpcvsnz.cv.hp.com>
Source record: 116927

Charlos Potma (charlos@rivm.nl) wrote:

: hello all,

: I have built the loop antenna described in QST of May 94,
: (works fine btw, tunes from 14-24 Mhz)
: and want to add a stepper motor drive to tune the antenna.
: I have found an old HP Thinkjet printer that has just the
: stepper motor I need: it has a step size of 7.5 degrees
: and combined with a small 1:6 gearbox I have it should do
: allright.
: The stepper motor (used in the printer for paper-feed)
: is apparently controlled by an IC marked: 1858-0097-8610 .
: My question is: what is this IC ?. Is it a HP part number ?.
: Can anyone tell me what it is and what I can use to replace
: it with ?

The 1858-0097 is not a proprietary part, as far as I can tell.
It's actually a Sprague ULN-2023A, 7-Darlington transistor array.
I don't have a Sprague IC catalog handy, or I'd tell you more,
but perhaps you can find the pin-out of the Sprague part.

--
Charlie Panek KX7L Hewlett Packard Company
charlier@lsid.hp.com Lake Stevens Instrument Division
Everett, Washington

1991. RFI from Heath "Big Ben" Chime Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 18:21:47 UTC
From: btoback@netcom.com
Message-ID: <btobackCtpsCB.DI1@netcom.com>
Source record: 116939
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

I noticed a strange phenomenon two nights ago -- or rather, I tracked it down, but it's been annoying me for months.

I've been plagued for a long time with a strange signal -- sounded like "louder" white noise -- that was recieved in a number of places in the HF bands. Because it sounded like some kind of wierd digital modulation, kind of like a high-speed modem, I assumed it was some kind of external interference.

A couple of nights ago, I tuned across the interference, and for no apparent reason, hit the FM button on my receiver. Suddenly, the noise became coherent: it was the tone generators on the clock, and I verified that it was the clock because one of the tones changed in time with the "tick-tock" sound -- and at the right pitch. The full chime sound could also be heard on the FM signal. I then did some fishing and discovered that the signal was repeated every 375 KHz starting from about 14 MHz. I couldn't find it anywhere below 14 MHz, but it may have been because of the noise level.

Has anyone else had this problem? And what did you do about it? And how the heck can I get a 30 MHz FM signal from that clock?!

-- Bruce KN6MN

1992. Re: Cb --> 10m anyone help?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 18:38:30 UTC
From: dbushong@wang.com
Message-ID: <Ctpt47.BuI@wang.com>
Source record: 116928

sdarragh@cisco.com (Scott Darragh) writes:

>Does anyone know how or have specs on converting a USB/LSB CB to a 10M
>radio?
>I would like to use this as a mobile backup unit.

Hi Scott,

There are some companies in the back of magazines such as _QST_ and
_73_ that sell modification booklets to do just that. Give them a
try. Usually it will cost you around $20 for the book, and less
than that for the parts to make the changes.

By the way, do you have an amateur radio license? Your name doesn't
seem to be listed in the callbook.

Regards, and 73,
Dave, KZ1O

--
Dave Bushong, Wang Imaging

1993. Coaxial Relay Sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 19:09:51 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <5mL9Pc3w165w@opus-ovh.spk.wa.us>
Source record: 116940
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.swap

A commercial dealer selling coaxial relays, Surplus Sales of Nebraska,
402-346-4750, advertising in Nuts & Volts, sells SPDT coaxial
relays for $38+$4 s/h. They look nearly identical to two I have
for sale and are indicative of a SP6T relay assembly I have
for sale.

I'll sell you a SPDT relay for about half that price: $20 + $3 s/h.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

1994. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 19:13:44 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <LTL9Pc4w165w@opus-ovh.spk.wa.us>
Source record: 116941

yee@mipg.upenn.edu (Conway Yee) writes:

> If QEX is truly only 24 pgs, there is barely an excuse NOT to have it
> in QST. A typical QST is circa 240 pgs long. What is an extra 24
> pgs?

A quibble: It's nominally 32 pages long.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

1995. Re: Telemetry frequencies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 19:16:16 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <TXL9Pc5w165w@opus-ovh.spk.wa.us>
Source record: 116942

andyb@access1.digex.net (Andy Harrah) writes:

> While waiting for my ticket to arrive, I've been designing a simple telemetry
> system to go onboard an R/C helicopter. My question is this - how do I
> handle the trade off of lower frequency equipment being easier to build at
> home vs. the benefit of having a full size antenna system on the helicopter.
> I started off thinking 50 MHz would be easy to work with until I got around
> to thinking about the antenna.

RC has used 27 MHz, 72 MHz, Amateur 50 MHz and now a new band (don't know it). Have you noticed the transmitter and receiver antennas aren't changing? They just keep using random length wires and metal stick transmitting antennas. Tune the finals for best signal strength.

I cringe when I see a modeller cut the antenna off because it's longer than the length of the wing.

Summary: Don't worry about the receive antenna. Just use a piece of wire. Your Amatuer Radio knowledge it showing through! :) Just pretend you don't know what you know.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

1996. IR tv remote via computer serial port?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 19:19:17 UTC
From: ed@fore.com
Message-ID: <Ctpv06.5ML@fore.com>
Source record: 116946

Has anybody seen software to record & playback / synthesize TV/VCR
IR remote signals using the parallel or serial port on an msdos computer?

Photo diode, > serial port dsr line (or something)
CTS line (or something) > IR LED.

I already have a universal remote hardwired through analog mux to the
parallel port, problem is, about 1 yr of battery life. Batterys go dead, the
remote dumps all the programs.(This is in use by a paralysed friend who
cant easily reprogram the remote again.)

I would like to be able to store data to a disk and then "PlayBack" IR
commands either from disk or ram memory.

Any info would be useful.

Thanks.

73

Ed N3SDO
** Email replys to Ed@fore.com **

1997. Re: Cold-switch relay voltage ratings

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 19:19:34 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <B4L9Pc6w165w@opus-ovh.spk.wa.us>
Source record: 116943

btoback@netcom.com (Bruce Toback) writes:

> Can someone give me an idea of how to calculate the maximum voltage
> rating of a relay that is cold-switched? It should be a function of the
> contact separation distance, assuming that the rest of the insulation
> on the relay is adequate to handle the voltage. I'm looking for a way

Are you familar with CCInk: The Computer Applications Journal (and the
associated BBS)? This discussion was hashed out a few months back.
E-mail me if you need contact info.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

1998. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 20:11:32 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CtpxFC.8Kv@srgenprp.sr.hp.com>
Source record: 116945

Charlos Potma (charlos@rivm.nl) wrote:

: The stepper motor (used in the printer for paper-feed)
: is apparently controlled by an IC marked: 1858-0097-8610 .
: My question is: what is this IC ?. Is it a HP part number ?.
: Can anyone tell me what it is and what I can use to replace
: it with ?

The 1858-0097 is a Sprague ULN-2023A, which is an array of 7 darlington transistors. I notice that Mouser Electronics (800-346-6873) sells a number of other ULN-xxxx darlington arrays. You might call and ask them if they can get the -2023, or maybe one of the others is a pin-compatible replacement.

AL N1AL

1999. Re: Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 20:21:57 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CtpxwM.8vJ@srgenprp.sr.hp.com>
Source record: 116932
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

DAVID BENGTSON X2711 P7798 (ep588deb@pts.mot.com) wrote:
: I've got a Mixer question. I'm working on a single bipolar transistor mixer,
: downconverting from 900 MHz to 21.4 MHz. High side injection. I've got a
: 2-pole ceramic block filter on the input, so the image noise contribution is
: taken care of. Now, the question. I have noticed that the indicated noise figure
: (Using a HP 8970 Noise fig Meter) vary's by about 4 to 5 dB depending on the
: generator that I am using for the LO injection. the HP 8657 is the worst,
: followed by an 8644 at about 2 dB better, with an old cavity tuned 8640 the
: best, at 4 to 5 dB better than the 8657. My initial take on this is that
: this is due to the variation in Phase noise between the generators, but I'm not positive.
MDS Simulations correllate with the results from the 8640, and I tend to
: think that those are the correct numbers (Besides, they are the best!) Is this
: due to the phase noise performance of the generators, or is there something
: else happening here?

: David Bengtson 407-364-3806
: Motorola No, I'm not speaking for Motorola
: Mail Stop 98 If I was, I'd be making more money!
: 1500 NW 22nd Ave
: Boynton Beach, FL 33626

With an unbalanced mixer, any broadband noise out of the signal generator
(whether phase noise or AM noise) will go right into the IF amplifier,
causing an increase in measured noise figure. Since the 8644 has better
phase noise than the 8657, it stands to reason that it would work better.
I believe that the 8640 has even better phase noise far from the carrier
frequency, due to the 8640's cavity-tuned oscillator (which has a much
higher resonator Q than the VCO's used in the synthesized signal
generators.)

The solution is either to use a balanced mixer or a local oscillator
with a tuned output.

Alan Bloom N1AL

2000. Re: Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 20:41:40 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31bpi4$a8b@hpscit.sc.hp.com>
Source record: 116933
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <CtpxwM.8vJ@srgenprp.sr.hp.com>,
Alan Bloom <alanb@hpnmarb.sr.hp.com> wrote:
>
>With an unbalanced mixer, any broadband noise out of the signal generator
>(whether phase noise or AM noise) will go right into the IF amplifier,
>causing an increase in measured noise figure. Since the 8644 has better
>phase noise than the 8657, it stands to reason that it would work better.
>I believe that the 8640 has even better phase noise far from the carrier
>frequency, due to the 8640's cavity-tuned oscillator (which has a much
>higher resonator Q than the VCO's used in the synthesized signal
>generators.)
>
>The solution is either to use a balanced mixer or a local oscillator
>with a tuned output.
>
>Alan Bloom N1AL

And the old HP 608 signal generator has better far out noise than
any currently manufactured signal generator. This is because it
has a tuned amplifier following the oscillator. The amplifier
tuning tracks with the oscillator tuning.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

2001. Re: Cb --> 10m anyone he

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 23:28:00 UTC
From: alan.wilensky@channel1.com
Message-ID: <40.1558.2425@channel1.com>
Source record: 116931

```
DB>By the way, do you have an amateur radio license? Your name doesn't
DB>seem to be listed in the callbook.

And your passport...drivers license, birth certificate, ss card, dog
license, cat license, organ donors card...youre not listed in the call
book, youre not listed in the callbook,this is a recording of the
private ham license police state.
```

Alan Wilensky, N1SSO
General Manager
Interactive Workplace Division
Vicom, LTD.
Phone: Edmonton Office
11603 165 St.
abm@world.std.com

• CmpQwk #UNREG• UNREGISTERED EVALUATION COPY

2002. Re: Mixer Noise figure Question

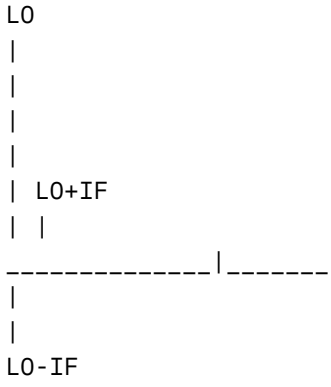
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-29 23:57:10 UTC
From: donc@qwert.sr.hp.com
Message-ID: <Ctq7vC.FIq@srgenprp.sr.hp.com>
Source record: 116937
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

jdow on BIX wrote:

> Don, all I suspect limiting would do to either generator is reduce the noise
> content on the skirts by maybe 3dB unless there is a strange AGC network that
> is many MHz wide at work introducing noise. Some generators DO have leveling
> circuitry that is not filtered that could cause this. I'd be hard pressed to
> believe this in an HP generator of recent vintage. A narrow band filter is
> a better solution. It'll knock the noise sidebands on the test oscillator down
> to reasonable proportions. (This exercise DOES point out how important GOOD
> oscillator design is in mixers.)
> <^_^> Joanne Dow, Amiga Exchange Editor
> jdow@bix.com

Alan's point about excess noise from the LO source at the IF frequency
(70 MHz) getting into the unbalanced mixer is very important; in my initial
response I forgot about this.

Suppose that this excess noise at F(if) has been filtered off. You still
might have a problem with noise offset from the LO by +-21.4 MHz, as was
mentioned earlier. I will explain why I think it is the AM noise, not the
phase noise, which causes the increased mixer noise figure. If the LO
has been limited so that no AM is present, then you have a pure FM spectrum
as shown here ...



Here, the upper and lower sidebands represent noise, but since no AM noise is
present the upper and lower sidebands are anti-correlated (shown by the lower
sideband going down). Thus, the upper sideband will mix down to the IF, but
the lower sideband also mixes down and cancellation occurs.

Comments?

That being said, I still think the best solution is the balanced mixer.
Putting a tuned filter on the LO would be tough since it would need to

be rather narrow-band, and limiting the LO would be more work than just getting a nice double balanced mixer.

Don Cook

2003. Model rocket telemetry..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 00:57:36 UTC
From: gt4879a@prism.gatech.edu
Message-ID: <31c8i0$84q@acmez.gatech.edu>
Source record: 116934

Howdy. I need some sort of circuit that can open a switch for about half a sec. or so and then close it and then repeat it after about ten seconds. Could someone give me an easy diagram for this? Thanks.

P.S. Does anyone know what a varactor diode is and where I can get one?

--
Joel V. Odom KB5GWK + pi=~3.14159265358979323846264338327950
24879 Georgia Tech +++++ 28841971693993751058209749445923
Atlanta, GA 30332 + physics 07816406286208998628034825342117
gt4879a@prism.gatech.edu + major 067982148086513282306647....

2004. Re: Cb --> 10m anyone he

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 01:18:13 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CtqBMD.LnC@news.Hawaii.Edu>
Source record: 116936

In article <40.1558.2425@channel1.com> alan.wilensky@channel1.com (Alan Wilensky) writes:
>
>DB>By the way, do you have an amateur radio license? Your name doesn't
>DB>seem to be listed in the callbook.

>And your passport...drivers license, birth certificate, ss card, dog
>license, cat license, organ donors card...youre not listed in the call
>book, youre not listed in the callbook,this is a recording of the
>private ham license police state.

Alan, this, together with your code complaints on .policy, is nauseating.
The previous poster had good reason to say what he said. The FCC
dictates that the amateur radio service be self-policing, meaning
we look after ourselves and each other; it's our responsibility to
help keep unlicensed operators off the ham bands.

This thread revolves around converting a CB radio to 10M or there abouts;
CB'ers are moving from 11M to 10.5M and illegally operating. That the
original poster is not listed in the callbook makes some of us
suspicious of his intentions.

Note that Dave asked about his license in a nice way.

Jeff NH6IL
jeffrey@math.hawaii.edu

2005. Crystal Regenerative Receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 01:19:54 UTC
From: vimx <vimx@delphi.com>
Message-ID: <p6ySbXC.vimx@delphi.com>
Source record: 116938

Does anyone know a circuit for a crystal controlled receiver which has a crystal whose frequency is the one you are receiving, not plus IF?
I think some cheap toy walkytalkys might have such a circuit and it should only need 2 or 3 transistors.

2006. Re: Mixer Noise figure Question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 05:06:30 UTC
From: jdow@BIX.com
Message-ID: <jdow.775544790@BIX.com>
Source record: 116935
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

donc@qwert.sr.hp.com (Don Cook) writes:

>jdow on BIX wrote:

>
<deleted text>
>Here, the upper and lower sidebands represent noise, but since no AM noise is
>present the upper and lower sidebands are anti-correlated (shown by the lower
>sideband going down). Thus, the upper sideband will mix down to the IF, but
>the lower sideband also mixes down and cancellation occurs.

>Comments?

As a matter of fact yes. Feeding a signal into a mixer stage generally requires SOME form of frequency sensitive network, be it a tuned circuit or a simple RC circuit between a FET's gate and ground. This will upset the phase relations between the upper and lower sidebands. In the past I have gotten best preditions based on total sideband power. (Within a few dB.) But I do note that I dispise single ended mixers if I have the power. Given enough power I go to double balanced quads. This gives even MORE "junk" suppression and generally a modest boost in IP3.

That said I pulled a different design long ago on a "how small can you make it" black world project. I starved the mixer for power. The LO *AND* the signal were both so low power that the noise from the SAW LO was ignoreable in the mixer. It had *LOUSEY* IMD and crossmod and IF rejection and all that. But it was for use where the RF environment was generally less than awful.
{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com
>That being said, I still think the best solution is the balanced mixer.
>Putting a tuned filter on the LO would be tough since it would need to
>be rather narrow-band, and limiting the LO would be more work than just
>getting a nice double balanced mixer.

>Don Cook

2007. Re: RFI from Heath "Big Ben" Chime Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 13:59:50 UTC
From: kludge@netcom.com
Message-ID: <kludgeCtrAvq.FG4@netcom.com>
Source record: 116944

In article <btobackCtpsCB.DI1@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>
>Has anyone else had this problem? And what did you do about it? And
>how the heck can I get a 30 MHz FM signal from that clock?!

Welcome to the 1990s! It seems that everything today has a pile of digital electronics in it, and digital electronics radiate. (Remember that a perfect square wave has an infinite number of harmonics, and you are seeing some of them at 30 MHz).

First of all, if the clock has a vacuum fluorescent display, you are probably in real trouble. I have had no luck reducing RFI from these things, other than by recycling them.

The first step is to add capacitance to the power supply line as close to the source as possible (and a .1 MFD ceramic is a good start). Most of the worst of the RF is radiated through the power lines, so if you cut off the noise at the chip, you're doing well. After this, you can start adding capacitance to the LED driver outputs, just on each pin of the matrix to ground. Again a .1 MFD ceramic from the junk box is a good start. Also look for bad grounds, corroded ground wires, and the like.

This fixes the majority of problems with small digital gadgets. Some of them take some more work, but this usually does it, and since the next step is shielding the case, you might not want to get that far anyway. I deal with this stuff all the time... at home my solution has been just to banish it from the house.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2008. Re: Mica HV Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 20:07:02 UTC
From: ells22@aol.com
Message-ID: <31ebt6$doq@search01.news.aol.com>
Source record: 116947

In article <2u9n91$b62@omnifest.uwm.edu>, raym@omnifest.uwm.edu (Ray Muschlewski) writes:

Thanks for the offer Ray. I am building a 4-1000A Amp with 4200 volts on the plate. I can use any size from .01Mfd up. Also for the screen, anything over 750 volts would be OK. I will pay all shipping of course. Let me know what you have. via E-mail.

Russ Ellsworth WA6CWV, Boise Idaho.

2009. Re: HISTORY OF 50 OHM COAX

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 20:30:16 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CtrsyG.8yC@freenet.buffalo.edu>
Source record: 116949

After reading several posts in this interesting thread, I happened to be leaf-
ing through an old magazine last night, and there it was. Thought that others
may enjoy the story of a man who was there, so I will attempt to abstract.

From: Bill Orr, W6SAI - "Coax Revisited" - Ham Radio, Jun'89
Time: mid-summer 1941
Place: Douglas Aircraft assembly plant, assembly line for the A20 (Boston)
attack bomber.

Orr says he and co-worker W6KJI were in the crowded tail section of a near
complete A20. Orr had turned on the 100 W. transmitter a few minutes before
and left it key-down for testing. His friend sad, "Feel the cable". It was
no surprise to Orr that the cable was, "very warm to the touch". The old
coax used "copolene" dielectric.

His friend lead him out of the plane and showed him new coax called WC549
and a box of "new style" fittings designated PL-259 and SO-239. Starting
with plane #386, this coax with brand new polyethylene dielectric and
"glistening in a black jacket" was to be used.

So there you have it... the exact time for the historic moment.

Orr goes on to talk about miles of coax being sold as surplus after the was
at 2 - 5 cents/foot !

This 52 ohm coax was later renamed RG-8/U ; RG = Radio Guide, 8 = type,
and U = utility service. It was later changed to 50 ohm with the
designation RG-213/U. At the same time 53.5 ohm RG-58/U was changed
to 50 ohm RG-58A/U and later to RG-58C/U.

Orr also goes into the quality scam which arose from the government
dropping the RG-8/U mil spec.

An interesting and useful point made by Orr is that RG-213/U or good
RG-8/U will weigh about 11 lbs./100 ft., while cheap RG-8/U will
weight as little as 8 lbs./100 ft. (note: foam differs)

--

2010. Info on old oscilloscopes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 20:39:04 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <31edp8$5br@hobbes.cc.uga.edu>
Source record: 116951
Cross-posted to: sci.electronics.repair,rec.radio.swap,rec.radio.amateur.homebrew

If I may blow my own horn for a moment, the latest Electronics Now (which arrived today) contains an article I wrote called "New Life for Old Oscilloscopes," complete with a schematic of a Heath IO-12.

What's amusing is that they bought the article from me in 1990, and I wondered for a while if it had been forgotten. But the information is at least as useful today as it was then.

There's also a book on old oscilloscopes being sold by Tucker Electronics. Has anyone seen it? I haven't, but it sounds like a useful thing.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

2011. Re: IC chip help, also Thinkjet IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-30 21:52:10 UTC
From: mzenier@eskimo.com
Message-ID: <Ctrwqz.MA2@eskimo.com>
Source record: 116948

In <199407291554.IAA02853@ucsd.edu>, Jim Reynante wrote:
: IC chip help
: I'm trying to develop a circuit that uses the output signal lines from a CMOS : IC : chip to drive a group relays (5 total) in an automatic antenna switching : unit. : The problem is that the level of the output signals from the chip are too low : to : directly drive the coils of the relays (they need 5V @ 200-300 mA). One : solution : that I have come up with is to feed the chip's output signals to a group of : switching transisitors used to drive the relay coils.

: Does anyone know of a chip that I could use to replace the group of
: transistors ?

Yes, the ULN-2003 or ULN-2803 from Allegro (formerly Sprague). These are 7 or 8 darlington relay drivers per package. Damper diodes included. These are 'Jelly Bean' devices, available from many manufacturers.

The ULN-2023 is a 95 volt version of the -2003, which is rated at 50 volts. $0.83 each in an older Newark catalog.

Mark Zenier mzenier@eskimo.com mzenier@netcom.com

2012. Re: Model rocket telemetry..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 17:34:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <31JUL199412340792@pavo.concordia.ca>
Source record: 116952

In article <31c8i0$84q@acmez.gatech.edu>, gt4879a@prism.gatech.edu (Joel Van Odom) writes...
>Howdy. I need some sort of circuit that can open a switch for about half a
>sec. or so and then close it and then repeat it after about ten seconds.
>Could someone give me an easy diagram for this? Thanks.
>
>P.S. Does anyone know what a varactor diode is and where I can get one?

Use a 556 timer with one timer set for 1/2 sec and the other set for 10 sec.
Then use the outputs in parallel to drive a transistor, relay etc.

A Varactor diode, sometimes called a varicap is a 'diode' who's capacitance
is varied by a DC bias voltage; often used to electronically tune radios. Most
of the major distribs. should carry them i.e. mouser, digi-key etc.

2013. Re: Cb --> 10m anyone he

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 19:39:00 UTC
From: alan.wilensky@channel1.com
Message-ID: <40.1578.2425@channel1.com>
Source record: 116954

JH>>DB>By the way, do you have an amateur radio license? Your name
JH>>DB>doesn't seem to be listed in the callbook.

JH>>And your passport...drivers license, birth certificate, ss card, dog
JH>>license, cat license, organ donors card...youre not listed in the
JH>call >book, youre not listed in the callbook,this is a recording of
JH>the >private ham license police state.

JH>Alan, this, together with your code complaints on .policy, is
JH>nauseating. The previous poster had good reason to say what he said.
JH>The FCC dictates that the amateur radio service be self-policing,
JH>meaning we look after ourselves and each other; it's our
JH>responsibility to help keep unlicensed operators off the ham bands.

JH>This thread revolves around converting a CB radio to 10M or there
JH>abouts; CB'ers are moving from 11M to 10.5M and illegally operating.
JH>That the original poster is not listed in the callbook makes some of
JH>us suspicious of his intentions.

I live to make guys like you nauseas. You might try waiting unitl he
actuaaly did something wrong before giving him the shakedown.

Please email me directly for special directions for a bentonite garlic
enema. It will do wonders for your attitude, making you feel less
stuffy.

Alan Wilensky, N1SSO
General Manager
Interactive Workplace Division
Vicom, LTD.
Phone: Edmonton Office
11603 165 St.
abm@world.std.com

• CmpQwk #UNREG• UNREGISTERED EVALUATION COPY

2014. Donde es el FAQ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 19:59:00 UTC
From: kevray@netcom.com
Message-ID: <kevrayCttM6D.1ur@netcom.com>
Source record: 116953

Is there a FAQ for this newsgroup? & where can I start looking for
mods to an icom2sra?

Thanks in advance.

2015. Re: Crystal Regenerative Receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 20:18:03 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <1877@uugate.wa7slg.ampr.org>
Source record: 116955

Receivers of this type are frequently used for single-channel monitors
(i.e. pilot-carrier monitor receivers, etc.)

However, things like 'walky-talkies' use regenerative receivers. These
are typically as broad as a barn door (100's of kilohertz wide...)
and tuned only by the obvious coil that is in the WT. The crystal
has nothing to do with this type of receiver. In fact, the crystal itself
is probably a 3rd overtone...

Regenerative receivers of this type are useful primarily for AM detection
and wideband FM. They radiate a lot of "noise" as well when they operate
and typically, they are not extremely sensitive...

If the Walky-Talkie has only a few transistors, it most likely uses this
type of receiver. The transmitter uses the speaker amplifier for
modulation...

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

2016. Re: What is this HPThinkjet IC?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 20:35:15 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <1897@uugate.wa7slg.ampr.org>
Source record: 116956

Actually, there is nothing particularly tricky about a stepper-motor driver.

I would guess that this stepper has 5 wires: A "common" and 4 others,
one for each phase.

A driver is pretty simple. First, determine the operating voltage of the
motor. Many implementations run the stepper at, say, 24 volts for
high torque and fast stepping, and then reduce the voltage to 5 or 12 volts
to reduce power dissapation.

In the past, I used a 24 volt stepper from an old 8" disk drive and ran it
at 12 volts. This provided plenty of torque and a fast enough stepping
rate for the application (i.e. steering a telescope...)

The stepper driver was very simple: The "common" wire on the motor was tied
to 12 volts (with a 1000uf capacitor, etc...) A diode is connected
across each winding to quench any back EMF.

I just used an NPN (emitter grounded, 4.7k resistor on the base from a
digital (CMOS) driving source. The transistor was nothing special
(PN2222... or anything that can switch several hundred milliamps...)

Of course, the driving sequence for the windings must be correct, but
I did this by simple lookup table in software. I also designed a
circuit using a few gates that converted a simple binary count to the
proper sequence for exciting the windings...

<Clint>

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2017. COAX RELAY For Sale details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 21:07:03 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <gegcqc7w165w@opus-ovh.spk.wa.us>
Source record: 116964
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.swap

Several people have returned messages asking for details about the coax relays I have for sale. Here's a more complete description of what I have.

I have three coax relays that I am no longer using. All are milled out of solid metal and plated. Two are 2-pole switches and the other is a 6-pole switch. The 2-pole switches appear similar to what Surplus Sales of Nebraska (402-346-4750) sells for $38+$4s/h. See the picture on page 40 of the July issue of Nuts & Volts. Theirs are spec'd at 100w, 500MHz, 1 amp contacts, 18-32 vdc coil. The coil on my unit appears a little less bulky than theirs and measures 280 ohms static DC resistance. All three relay assemblies I'm selling are in good condition, fully functional.

1:6 coax relay:

A 3" x 2.5" block of metal with a central BNC sticking out of the middle. On either side are vertical stacks of 3 BNC connectors. On the back are six coils (stamped with "26 VDC"). Down the center, between the two sets of 3 coils is an inspection plate.

Removing the inspection plate shows a brass? copper? bar soldered directly to the central BNC center pin and held in position at the extemes with teflon spacers. Each relay, when energized, lowers a flexible metal strip onto the bar. Each flexible metal strip, in turn, goes to a BNC center connector. The shield of all BNC connectors are silver soldered directly to the block. All six contacts appear to be normally open, and close upon relay actuation.

1:2 coax relays:

The other two are identical milled bars (instead of blocks) with similar central feed and two other BNCs on the left or right. Construction is comparable, except the relay moves two plastic pins that simultaneously switch contacts on both BNCs. On these, one output is normally open, the other is normally closed.

-- a short bandwagon speech:
I've purchased/sold a bunch through Internet and recently advertised a Private Pilot study course with a price and received 12+ responses. How do I best sell N items to N+x people?! Simultaneously, I advertised an analytical balance with no price (asking for any offers for the valuable white elephant) and pretty much received hate mail from a user.
Here's my next best plan, layed out for your acceptance or critique:

I advertised the 1:2 relays on the net for $19+$3s/h. If you'd like one or both relays at that price, pre-paid with a postal money order, let me know.

Any more than two takers and I'll pull e-mail addresses from a hat.
Anybody who offers to prepay more with a postal money order, will get first dibs. I'll sell the 6-pole switch to the highest offer to pre-pay.

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2018. Optoelec's 3000A handicounter review

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 21:38:44 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <0uHcqc1w165w@opus-ovh.spk.wa.us>
Source record: 116965
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Optoelectronics 3000A Product Review - September 1993
Copyright (c) 93,94 Brian Mork -- "not to make money, but to keep it that way for others."

>>> HISTORY
June 19th of 1993, I distributed a product review of Optoelectronics' 3000A handicounter. It had bad dBm calculations. A 29 July distribution fixed these errors and the text was cleaned up in other ways. More complete input sensitivities were reported. This version includes subsequent perspective after use of OE's M1 handicounter (see the M1 product review of this same date -- it is a pared down version of the 3000A). Damien Thorn (Internet drdamien@delphi.com) wrote a non-technical review article on several of OE's products (covering more why you'd want them and what to do with them once you own them) that appeared in the August 1993 issue of Nuts & Volts.

>>> ABSTRACT
A 10Hz-3GHz feature-laden counter/timer/frequency meter could be a good addition to your shack if you don't have the functionality yet. There are some disallowed configurations that give you less than you may think if you casually read the laundry list of features. Input specifications need more attention or at least acknowledgement of real-life problems.

>>> CONSTRUCTION
The case is an extruded U-channel of aluminum with a flat top plate and end plates. The end plates screw into the U-channel with four screws, one of which is a machine screw. This one is by the A input, apparently designed to provide a better "bite" into an interior copper shielding plate around the A input.

A single 9.2cm x 12.6cm circuit board lies under the faceplate, directly mounting the three buttons and six slide switches, which, in turn, poke through the front plate. A piggyback (piggyfront?) board holds the LCD display. There are two main chips--the OE10 vaulted in Optoelectronics' marketing literature and an SC87C51. My 8751 is labeled M1.3000A 5.20.93 VER 2.1 with a little sticky label. The two main chips and a transformer on the board have a white chalky substance around them as if they were hand soldered and the flux vapors weren't cleaned off. Hope it doesn't corrode. Probably 200 additional components, mostly surface mounted, also occupy the circuit board.

The six batteries are stuck to the back shell (double sided tape?). The two battery wires terminate on the circuit board with a separable connector. The batteries' weight and the solid aluminum case give the unit a solid feel. Neither the wall-wart charging unit or the 3000A itself have

a charging light. For the extra resistor and LED, I would like one. Too many times I've had some master switch, wall switch or loose plug inadvertently negate my effort to charge batteries. And when do you find out? When you needed the unit to be charged.

There are three plastic sheets stuck on the external top and face of the unit. My top piece was peeling off slightly. The front bottom one was crooked enough to let Button 2 not bounce back up. Slight trimming fixed that. I can't tell if the white lettering is applied on top of the plastic or behind the plastic. I hope it's behind so that they don't wear off. All the aluminum is painted black --not drippy, but it has the appearance of thick enamel. Personally, I would much rather have black anodized so there would be no possibility of chipping paint.

>>> OWNER'S MANUAL
It's five sheets of photocopied 8-1/2" x 11", printed in landscape mode and folded in half. It's short, but operation of the 3000A is easy, so maybe a lot isn't needed. I would propose inclusion of a few diagrams and tables rather than all linear text description. Included in the manual are:

Features description..... 2 pages
Specifications..... 1 page
Operation..... 2 pages
Data Interface..... 2 pages
Block schematic..... 2 pages
Operation hints..... 4 pages
Battery & Power..... 1 page
Calibration..... 1 page
Warrantee..... 1 page
Service & Return..... 1 page

A loose sheet of paper describes how to turn on the backlight option.

I wanted to know what I could plug into this meter. Nowhere in the specs or owner's manual are the max input ratings. After talking with the factory (toll call is small compared to the purchase price, but still is annoying), I find the 1 Mohm inputs can handle a maximum on the order of 50 volts AC+DC. The Model 3000 (not the 3000A) specified 100V RMS as the maximum. Anyhow, I feel good about plugging in TTL.

DON'T plug TTL into the inputs if the 50 ohm switch is selected! More subtly, be sure you *unplug* it before you slide the switch to the 50 ohm position. The same phone call revealed that the 50 ohm inputs handle a maximum of +15 dBm. That's 1.2 volts RMS in a 50-ohm system, corresponding to 3.4 volts Peak-to-Peak if the waveform is a sine wave. Another user was told by a factory technician that "a 5W HT connected to the counter input for a short time would not damage the counter." Five watts is about +37 dBm! Does the amount of time matter? The correct numbers need to be in an Owner's Manual, especially since the warranty excludes "damage to the input circuitry from the application of an excessive input signal."

I would suggest making no direct electrical connections to the 50 ohm amps. Only antenna type inputs should be used when the 50 ohm amps are selected. I've wrapped an 8" wire (snake like) around cordless phone antennas, and that works ok, but even this would be *way* to much for a 100W HF transmitter. Be careful. Full scale bar graph ranges from 2 - 4 mV, depending on the frequency. If you stay on scale, you're safe, but most of the valid input window is above "full scale." In the range 4 mV to approximately 1200 mV, you'll be increasing power "in the blind."

>>> OPERATION
Some non-obvious combinations of functions and inputs is the order of the day. This is kind of weird, but is intentional to give you the best sensitivity possible, using a number of specialized input amps.

Turn it on, holding down a Button 2 if you want the optional backlight to come on. Button 3 selects the gate time (resolution). With a slide switch, you select either 1 Mohm (Hi-Z) or 50 ohm (Lo-Z) amplifiers.

If you select Hi-Z inputs, Button 1 selects either/both A and B inputs. Button 2 rotates between FREQUENCY, PERIOD, INTERVAL, and RATIO. Input A measures only 10Hz - 50MHz, with sensitivity of a few tens of millivolts. Input B measures only 10Hz - 10MHz, with a sensitivity of better than ten millivolts.

If you select Lo-Z inputs, a signal strength bar-graph indication automatically appears and you must select one of three input amps:

Input A only, from 10MHz - 220MHz (0.3 to 5mV sensitivity)
Input A only, from 10MHz - 880MHz (divide by 4 prescaler)
Input B only, from 500MHz - 3000MHz (new amp, div by 16 prescaler)

On one of OE's product literature flyers, they speak of a 1-200MHz input. A phone call confirmed that this range exists only as a typo on the product literature flyer.

In parallel with all the above input selections, two switches let you operate in either of four modes. I'll call them modes 00, 01, 10, and 11, representing whether FILTER and CAPTURE, respectively, are off (0) or on (1).

00 (FILTER off, CAPTURE off) Operates as described above. This is the single mode of the original Model 3000. Meter shows updated values even if it's counting noise. Gate light blinks continuously.

10 (FILTER on, CAPTURE off) PERIOD, INTERVAL and RATIO are disabled. Computer logic looks for meaningful oscillations, providing a new frequency value only if a legitimate count is acquired. A higher level of filtering can be selected by holding down Button 3 during power up.

11 (FILTER on, CAPTURE on) Same as mode 10 except nothing happens until you arm the system by pressing Button 2. Once you do this, the word "frequency" flashes on the display until a legitimate

count is snagged. A three-memory buffer (the display plus two more) keeps previous values. They are referred to as X, A, and B. X contains the most recent, A the second most recent, and B the third most recent. When a fourth value is snagged, the value in B is lost.

01 (FILTER off, CAPTURE on) In this mode, no measurements are taken. Button 2 rotates between the three memories recorded in mode 11.

>>> PRODUCT SUPPORT
In some sense, there's not much to support. The meter either works or it doesn't. Operation is very straight forward. I don't call to harass service personnel and I *do* read the manuals first. I did call to find out about the input characteristics as discussed above and was, well, not impressed.

Female answers and I ask for service or tech help. After 2 minutes, the line drops dead. I call back. Same female passes me on to Ray quickly this time. I ask Ray about input specs. He says that, yes indeed, that has been inadvertently left out of the manual. Stand by. Three minutes. Ray comes back with info. The 1 Mohm inputs are "plus 50 volt AC plus DC", the 50 ohm inputs are "plus 15 dBm." Yes, that's what I wanted! Follow up: What do you mean by 50v AC+DC?" Hmmm. He didn't know; that's what the engineer told him. Ok. Is it capacitively coupled? Uhh.. the inputs go right into a "MAR6 amplifier." Could you please send me a copy of just the front end prior to the MAR6 amps? Pause... "Well, there's a capacitor that goes to ground." Yes, that's the kind of info I want. What size? Maybe a pf or two? "It's a 50v electrolytic." Eeee wrong person. Would he send me just a copy of the front end schematic? "No, we don't have anything like that I could send you." Ok, well thanks anyhow. Bye.

In retrospect, I should have asked for the engineer who was sourcing this information. Inputs are listed in the specifications as 1MHz, 30pf. This seems believable since it mimics a normal oscilloscope input. But are they AC or DC coupled? With what size, type & rating capacitor? I was hoping to use the INTERVAL or RATIO mode with Input B held open so I can count events on Input A. At Dayton a year back, I spoke with a man named Bill Owens who seemed to have a good handle on the company's history and the capability of the product line. I wish his knowledge was conveyed better to potential buyers.

>>> REAL LIFE
I have two regimes of interest for which I want this counter. The first is modem and ultrasonic work in the KHz to 100 KHz range. The second is radio VFO work, requiring MHz up to GHz. I characterized the 3000A with a 20Hz - 1MHz function generator, my Yaesu 757GX/Vectronics VC300DLP combo, and a Hewlett-Packard VHF/UHF generator.

--- low frequency ---
For the less than 1MHz work, the Hi-Z inputs are used. I have a 1MHz TXCO standard in my shack that has an output floating on the back side of

a little toroid transformer. It gives out approximately +-0.5v into my 500 Kohm load (3000A and oscilloscope in parallel). My 1MHz output shows up as a stable 6.00 Mhz on the 3000A. What?! Yes. Regardless of the filter selection (none, medium, or full), six megahertz kept being displayed. The waveform was not symmetric, I'll give that much, but it was very stable and clean from other high frequency hash. It looked sort of like this:

```
|\ |\ The waveform stayed the same regardless of
0 V___| -- | -- whether the 3000A was hooked up. The 3000A
| | | | counted the same regardless of whether the
-. .---. o'scope was hooked up. P-P voltage was 1.5v.
```

The 1MHz output from my TXCO was a square wave ranging between 0 and 2 volts. Regardless of the 3000A filter selection, it showed a frequency of 3.0 MHz. Another user working on a homebuilt oscillator also reports extreme sensitivity to harmonics. This harmonic sensitivity, combined with extreme sensitivity makes the instrument virtually useless when using any frequency multiples in your project: you won't know which signal is being locked onto.

I fired up a variable frequency / variable amplitude function generator and o'scope combination. The generator went to the scope with a BNC T-tap half way that plugged into the 3000A.

Using the A input, I needed incredulously large amplitudes--WAY above the specified <20 mV. Using the B input was even worse. The procedure used was to start at about 100 mV and go down first. If a stable count held, I reduced the PP voltage until spuratic readings were obtained. If 100 mV was giving spuratic or known-to-be-wrong numbers, I turned the amplitude up until a stable reading was obtained. The resultant measured PP voltages (asterisks indicate I never was able to get a good count):

Frequency	Input A	Input B
20 Hz	2 V (0.78 VRMS)	*
200 Hz	1 V	*
350 Hz	0.6 V	*
60 KHz	50 mV	4 V
500 KHz	<10 mV	1 V

Square wave counting was similar. For instance, 2 V PP was needed at 10 KHz to get a good count with Input A. In all cases, the scope showed clean signals with no high frequency hash. Testing at another ham's shack who had a fancy HP generator and scope yielded the same results within 10%. Stable operation of the Hi-Z input is mandatory to use the interval and period functions of the 3000A, and this condition does NOT seem to be met. I consider the non-frequency modes to be historical carry-overs from the product lines' 7226 counter heritage rather than useful features of OE's OE10 custom chip.

I own a PK232 radio modem and decided to see if the meter was good enough to tune the audio tones. With full output from the PK232 (about 0.5v PP on the scope, giving 140mV RMS on a Fluke DVM good to 10KHz), I stuck the tones into Input A and Input B with Hi-Z amps selected. The 2200Hz tone showed as 2265+-5Hz (A) and 23KHz (B), respectively. The 1200Hz tone showed as 1820+-15 (A) and 31KHz (B), respectively. No, I did not adjust the PK232.

--- high frequency ---
My RF test goal was simple. How accurate is my 757GX VFO? Working near 10MHz, the Lo-Z A input (only one suitable for this measurement) has an advertised sensitivity of <5mV. With a 12" dangling wire near the coax out the back of the radio, the counter was dominated with a signal at approximately 104 MHz (103.9 FM?). Later tests 25 miles across town again showed that with a wire pigtail antenna, it was being dominated with this station. I bought an RS15-577B FM trap and put it in line. Now a 68 MHz interference dominates, probably the local Channel 4 TV station.

I went back to the Hi-Z inputs. At this point I was trying to determine the electrical length of some coax. A 1/4 wavelength of coax is terminated with a short circuit, and fed in parallel with a 50 ohm load with a mid level RF power (see page 74 of the June 93 QST; the goal is to get a 1:1 SWR). The high current node at the terminator is the point I was trying to pickup RF with the 3000A. Twenty turns of perfboard wire around a pencil stepped up the voltage enough for the meter to register stable counts when the pickup coil was positioned near the end of the coax shorting wire loop.

Characterization of the three 50-ohm amps with an HP generator showed solid frequency locks at these random check points:

Fast Amp	Middle Amp	Slow Amp
800MHz, -47dBm, 1.0mV	100MHz, -65dBm, 0.12mV	150MHz, -60dBm, 0.22mV
1000MHz, -43dBm, 1.6mV	450MHz, -54dBm, 0.45mV	

Attempts to do PERIOD, INTERVAL, and RATIO measurements were unsuccessful due to the skittish behavior of the Hi-Z inputs.

>>> OPTIONS
You can buy a precision (0.2 ppm vs 1.0 ppm) timebase for an extra $100. What used to be a $45 backlight option now seems to be a non-optional extra expense. September advertisements still quote the lower price for the standard model, but the sales personnel won't sell one that way.

--- time base ---
There are two reasons why I did not want to buy the precision time-base option. One is because a RATIO mode is provided and I already have a precision 10MHz TTL oscillator scavenged from an old LORAN navigation board. 10MHz also happens to be the maximum frequency Input B accepted in the ratio mode (all ratios are A/B). What a coincidence. Works for me!

The second reason is simply that the 1ppm timebase is specified to age at a rate of 1ppm/year. A 0.2 ppm option would be degraded to the 1.0ppm option in only about 10 weeks. In any case, I usually don't need to know the last 2 Hz on a 10000000 Hz signal.

--- backlight ---
When it's on, I can hear a switching circuit bringing up a high voltage for the luminescent display. It turns off after 10 seconds of inactivity and comes on again when some button is pressed or frequency is acquired.

It looks good. Worth $45? The native display is plenty readable and the extra light actually makes reading it harder from angles "above" the counter.

>>> GOTCHAS
The serial interface is unidirectional. You send it a CR and it sends back 10 digits and a decimal point, in ASCII, 2400bps, 8 bits, no parity, 1 stop bit. It only works in FREQ mode. It provides only the most recent number, with no indication of whether this is another sample or the same number it just sent you after your last request. The interface can sink 1.6mA and source 0.06 mA.

Excellent amplifier sensitivity isn't everything. Sometimes it's even a burden. For decent counting, the signal you're monitoring must exceed the noise (combination of *all* other RF signals in the bandpass of the selected amp) floor by 10-15dB. Specified sensitivity ranges from -57dBm to -11dBm. The input amp is limited to +15dBm. Ambient noise, including FM stations hovers about -11dBm. Play with those numbers and you'll see that the window for a good count can be pretty small. Try to measure a cordless phone near your transmitter or computer monitor? Probably not. If you live near a broadcast station, good luck. I don't consider these numbers a design flaw given the intentionally wide frequency range of the amps, but it definitely affects your day-to-day operation.

In Damien's review, he emphasizes the importance of a limited bandwidth antenna. Take this recommendation seriously. Wide range frequency coverage means susceptibility to noise. A bandwidth limiting antenna helps mitigate this problem.

>>> SUMMARY
The at-your-door price for a 3.5" x 5" circuit board seems a bit high, but the counter is specified to do what I need it to do, plus a few options. Resolving the skittish Hi-Z input problems is a must. The M1 gets around this by simply not having multifunction capability. Paying the extra $100 for a 3000A with specified capabilities that in real life are marginally usable deserves a second thought.

All models are available only direct from the manufacturer in Florida. Contact Optoelectronics: 5821 NE 14th Avenue, Ft Lauderdale, FL 33334. 800-327-5912 or 305-771-2050. FAX 305-771-2052. Makes you want to dial ..2051 and see who you get, doesn't it? :)

73, Brian Mork (Opus-OVH) ARO KA9SNF@ka7fvv.#ewa.wa.usa
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2019. Optoelec's M1 handicounter review

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 21:39:51 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <5wHcqc2w165w@opus-ovh.spk.wa.us>
Source record: 116967
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Optoelectronics M1 Product Review - September 1993
Copyright (c) 93,94 Brian Mork -- "not to make money, but to keep it that way for others."

>>> HISTORY
In June of 1993, I distributed a product review of Optoelectronics' 3000A on Packet and Internet networks. It had bad dBm calculations. A July distribution fixed these errors and the text was cleaned up in other ways. More complete input sensitivities were reported. I now have an M1 counter and this review reflects the new experiences. A third version of the 3000A review is distributed concurrently.

>>> ABSTRACT
A 10 Hz - 2.4 GHz frequency meter could be a good addition to your shack if you don't have the functionality yet. The M1 is essentially a pared down version of the 3000A. At many places, this review assumes you have experience with the 3000A or have read that review. The 3000A I owned for a short while was returned because it was too tender and vulnerable to real-life conditions. Since then I've purchased an M1 and intend on keeping it. It is my recommendation to most people.

>>> CONSTRUCTION
The case is an extruded U-channel of aluminum with a flat top plate and end plates. The end plates screw into the U-channel with four screws, one of which is a machine screw. This one is apparently designed to provide a better "bite" into an interior copper shielding plate around the input. The gate LED on the M1 protrudes excessively from the LCD panel, unlike the 3000A LED, which was mounted to the same height as the switches and pushbuttons.

A single 6.5cm x 11.7cm circuit board lies under the faceplate, directly mounting the two buttons and five slide switches, which, in turn, poke through the front plate. A piggyback (piggyfront?) board holds the LCD display. There are two main chips--the OE10 vaulted in Optoelectronics' marketing literature and an SC87C51. The two main chips on the board have a white chalky substance around them as if they were hand soldered and the flux vapors weren't cleaned off. Hope it doesn't corrode. Probably 200 additional components, mostly surface mounted, also occupy the circuit board.

The M1 has four battery cells. Literature claims a recharge lasts about an hour less than the 3000A. My M1 ran for 6:50 on a full charge. The low battery indicators, although functional during the power-on check, never did illuminate during the battery run-down check. The counter just quit counting and a minute or two later the display faded.

A non-technical review of OE's products (covering more why you'd want them and what to do with them once you own them) written by Damien Thorn (Internet drdamien@delphi.com) appeared in the August 1993 issue of Nuts & Volts. He sounds like he enjoys his 3000A. I prefer the M1. The M1 costs $100 less.

>>> OWNER'S MANUAL
It's five sheets of photocopied 8-1/2" x 11", printed in landscape mode and folded in half. It's short, but operation of the M1 is easy, so maybe a lot isn't needed. I would propose inclusion of a few diagrams and tables rather than all linear text description. Included in the manual are:

Features description..... 2 pages
Specifications..... 1 page
Controls..... 2 pages
Data Interface..... 2 pages
Block schematic..... 2 blank pages
Using the Counter..... 4 pages
Battery & Power..... 1 page
Calibration..... 1 page
Warrantee..... 1 page
Service & Return..... 1 page

A loose sheet of paper gives an overall Block schematic.

The max input ratings match the 3000A. The 1 Mohm inputs handle a maximum on the order of 50 volts AC+DC (specified as 100 V RMS in the product literature flyer).

The 50 ohm switches have MUCH less range! Be sure you *unplug* large voltage sources (such as TTL) before you slide the switch to the 50 ohm position. They handle a maximum of "+15dBm or 50 milliwatts". These numbers don't quite match by my calculation (+15dBm is 32 mW). The range corresponds to approximately 1.2 RMS in a 50-ohm system, corresponding to 3.4 volts Peak-to-Peak if the waveform is a sine wave. Accurate numbers need to be available.

I would suggest making no direct electrical connections to the 50 ohm amps. Only antenna type inputs should be used when the 50 ohm amps are selected. I've wrapped an 8" wire (snake like) around cordless phone antennas, and that works ok, but even this would be *way* to much for a 100W HF transmitter. Be careful and use the bargraph. Full scale bar graph ranges from 10-20 mV, depending on the frequency. This covers a large range than the 3000A and seems to cover the range of real-life signals better, but it is less sensitive.

>>> OPERATION
Turn it on, holding down a Button 2 if you want the optional backlight to come on. When the backlight is on, I can hear a switching circuit bringing up a high voltage for the luminescent display. It turns off after 10 seconds of inactivity and comes on again when some button is pressed or

frequency is acquired.

Button 2 selects the gate time (resolution). With a slide switch, you select either 1 Mohm (Hi-Z) or 50 ohm (Lo-Z) amplifiers. The M1 has only one input, and is incapable of period, ratio, and interval measurements.

If you select Hi-Z input, you can count 10Hz - 50MHz, with a claimed sensitivity of a few tens of millivolts, identical to the 3000A Input A.

If you select Lo-Z inputs, a signal strength bar-graph indication automatically appears and you must select one of two input ranges:

10MHz - 200MHz (3 stage amp)
10MHz - 2400MHz (2 stage amp, divide by 64 prescaler)

The M1's 50 ohm input covers the entire range 10-2400 MHz, whereas the 3000A allows selection of 10-220 MHz or 10-800 MHz on the A input and provides 500-3000 MHz on the B input. The M1 has slightly less advertised sensitivity (blank entries imply no published specification):

MHz	M1	3000A
10	5 mV	5 mV
150	0.3 mV	0.3 mV
200	0.45 mV	
400	0.6 mV	
800	3 mV	3 mV
1000	10 mV	1 mV
2000	5 mV	
2400	50 mV	
3000	60 mV	

The M1 bargraph has a full scale reading of 10-20 mV, whereas the 3000A has a full scale reading of 2-4 mV (dependent on frequency in both cases). It has ten RF bandwidth/display resolution combinations (same as the 3000A), but because it has only two RF ranges, each range has more gate time selections. I *still* don't understand what the sense is providing more than 6 digits of resolution with a 1ppm time base. This misleading "resolution" continues to be an Optoelectronics selling point and is inappropriately echoed by others.

In parallel with all the above input selections, two switches let you operate in either of four modes. I'll call them modes 00, 01, 10, and 11, representing whether FILTER and CAPTURE, respectively, are off (0) or on (1).

00 (FILTER off, CAPTURE off) Operates as described above. This is the single mode of the original Model 3000. Meter shows updated values even if it's counting noise. Gate light blinks continuously.

10 (FILTER on, CAPTURE off) Computer logic looks for meaningful oscillations, providing a new frequency value only if a legitimate

count is acquired. A higher level of filtering can be selected by holding down Button 1 during power up.

11 (FILTER on, CAPTURE on) Same as mode 10 except nothing happens until you arm the system by pressing Button 2. Once you do this, the word "frequency" flashes on the display until a legitimate count is snagged. A three-memory buffer (the display plus two more) keeps previous values. They are referred to as X, A, and B. X contains the most recent, A the second most recent, and B the third most recent. When a fourth value is snagged, the value in B is lost.

01 (FILTER off, CAPTURE on) In this mode, no measurements are taken. Button 2 rotates between the three memories recorded in mode 11.

>>> PRODUCT SUPPORT
Optoelectronics employees are professional and are helpful on the business end of things. Raw technical knowledge and, thus, the ability to help diagnose problems or give application suggestions is, in my experience, limited to only one person. See the 3000A product review for details of my experiences.

>>> REAL LIFE
I have two regimes of interest for which I want this counter. The first is modem and ultrasonic work in the KHz to 100KHz range. The second is radio VFO work, requiring MHz up to GHz. I characterized the M1 with a 20 Hz - 1 MHz Heath EUW-27 function generator, my Yaesu 757GX/Vectronics VC300DLP combo, an ADD8000 analog/digital prototype station, a Fluke 8000A DVM, and a Solaritron CD1400 oscilloscope.

--- low frequency ---
For the less than 10MHz work, the Hi-Z inputs must be used. I have a 2 MHz TXCO standard in my shack that has an output floating on the back side of a little toroid transformer. It gives out approximately +-0.8v with an output resistance of 100 ohms. The 2 MHz output shows up as a stable 1.999947 MHz on the M1. The waveform was not symmetric, but it was very stable and clean from other high frequency hash. It looked sort of like this:

```
-. .---. The waveform stayed the same regardless of
| | | whether the M1 was hooked up. The M1
| --. | -- counted the same regardless of whether the
./ ./ o'scope was hooked up. P-P voltage was 1.7v.
```

The 1 MHz TTL tap from the TXCO was a square wave ranging between 0 and 3.8 volts. Regardless of the M1 filter selection, it showed a stable frequency of 0.999974 MHz. These tests came out MUCH better using the M1 than the 3000A.

I next fired up the Heath variable frequency / variable amplitude function generator. I needed large amplitudes--WAY above the specified 10-20 mV. The procedure used was to start at about 1 V and decrease the voltage. If a stable count held, I reduced the PP voltage until spuratic

readings were obtained. The resultant measured PP voltages (asterisks indicate I never was able to get a good count):

Frequency sine square
--------- -------- --------
20 Hz * 35 mV
200 Hz 2.7 V 12 mV
60 KHz 1.8 V 15 mV
500 KHz 70 mV 20 mV

In all cases, the scope showed clean signals with no high frequency hash. For the two lowest frequency square wave measurements, hand placement while adjusting the voltage level significantly affected the required amplitude. Best (lowest) voltages are reported above.

The results for the sine wave signals are about 2x worse than the 3000A Input A response, but incalculably better than the 3000A Input B response. The M1 responded well to square waves whereas the 3000A did not.

I own a PK232 radio modem and decided to see if the meter was good enough to tune the audio tones. With nominal output from the PK232 (130mV RMS on the Fluke, good to 10KHz), I measured the tones with the default digital filtering of the M1 engaged. The 2200Hz tone showed as 2272+-1, the 1200 Hz tone showed as 1278+-9 (14 samples each, standard deviation reported).

--- high frequency ---
My RF test goal was simple. How reliable is measurement of my 757GX VFO? Working at 15 MHz, the Lo-Z input (only one suitable for this measurement) has an advertised sensitivity of 5 mV. I used a scanner antenna, supported about and inch away from a resistor I used as a load. The counter's bargraph was about 3/4 scale deflection from the ambient noise. The transmitter's VFO was allowed to stabilize or about half and hour and then brought to within 5 Hz of WWV's 15 MHz carrier. Transmitting 25 watts into the dummy load resistor, the counter hit full scale bargraph and displayed a frequency of 15.012 MHz. At 100 watts, the M1 displayed 15.001 MHz. Accuracy doesn't look so good under reasonable ham shack conditions, but the M1's 50 ohm input is at least usable whereas the 3000A's was not under similar circumstances.

>>> OPTIONS
You can buy a precision (0.2ppm vs 1.0ppm) timebase for an extra $100. Again, I stayed away from the 0.2 ppm precision timebase because specified aging would quickly degrade me back to the standard 1.0 ppm timebase. Additionally, I don't often need to know the last 2 Hz on a 10000000 Hz signal. As with the 3000A, the electroluminescent backlight is no longer an option-- the standard price is just higher.

>>> GOTCHAS
The serial interface is unidirectional. You send it a CR and it sends back 10 digits and a decimal point, in ASCII, 4800bps, 8 bits, no parity, 1 stop bit. It provides only the most recent number, with no indication

of whether this is another sample or the same number it just sent you after your last request. The interface can sink 1.6mA and source 0.06 mA.

Excellent amplifier sensitivity isn't everything. For decent counting, the signal you're monitoring must exceed the noise (combination of *all* other RF signals in the bandpass of the selected amp) floor by a claimed 10-15 dB. Specified sensitivity ranges from -57dBm to -13dBm. The input amp is limited to +15dBm. Ambient noise, including FM stations hovers about 3/4 scale on the bargraph when using an AR100XLT scanner antenna. Since the scale goes from -56 to -26 dBm, that's roughly a -33 dBm noise floor. Adding in the 15 dB overhead for a good measurement gives -18 dBm required signal. That would be 8 dBm above full scale, roughly 3 bar segments. This matches real life experience of the Yaesu 757GX related above.

The Hi-Z M1 input handles square waves better than sinusoids, whereas the 3000A showed terrible susceptibility to harmonic lock-on with non-sinusoidal waveforms -- both for me and the other friend spoken of above. He was trying to measure a frequency multiplying class C VFO and confusion as to which stage was being measured made the meter unusable. On another project, anywhere near a 50 KHz switching power supply, measurements were dominated by it. He asks "would I have this problem with a TEK or HP counter?" I don't know. I know my extensive experience with a 7226B counter in the 1 to 10 MHz range showed none of the bizarre behavior seen with this (and the 3000A) high sensitivity counter. Triggering of these counters is just erratic. Perhaps a DC trigger with variable threshold adjustment would be better. OE's digital filtering DOES help, but often the filter is fooled or else specified sensitivity is unattainable.

In Damien's review, he emphasizes the importance of a limited bandwidth antenna. Take this recommendation seriously. The M1's bargraph covers the range of real-life, on-the-air signals much better; it actually moves around rather than being saturated most of the time. The required 10-15 dB spread between noise and desired signal appears as 3 to 4 bargraph segments on the 16-segment display. The 3000A and the M1 appear to be optimized to do off-the-air measurements. In this role, using the M1, I've had fun snagging frequencies used by all sorts of Air Force base agencies in a manner just as Damien described. In the lab, using hard-wire connections, the Hi-Z inputs of the M1 don't measure up to specs and the 3000A inputs seem downright unusable.

>>> SUMMARY
Paying $100 less for a M1 balances against having only one input and loosing the extra modes of operation. Because these extra modes relied on the unreliable Hi-Z inputs, I don't miss them. I am extremely interested in hearing reports from others in the field that have success or failure with the M1 and 3000A Hi-Z inputs.

All models are available only direct from the manufacturer in Florida. Contact Optoelectronics: 5821 NE 14th Avenue, Ft Lauderdale, FL 33334.

800-327-5912 or 305-771-2050. FAX 305-771-2052. Makes you want to
dial ..2051 and see who you get, doesn't it? :)

73, Brian Mork (Opus-OVH) ARO KA9SNF@ka7fvv.#ewa.wa.usa
Internet BMORK@opus-ovh.spk.wa.us
6006-B Eaker, Fairchild, WA 99011

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

2020. Minisport Laptop Hacker #22

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-07-31 22:15:56 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <0kJcqc1w165w@opus-ovh.spk.wa.us>
Source record: 116768
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,comp.sys.zenith

MiniSport Laptop Hacker - Vol #22. July 1994
To discourage pecuniary interests, Copyright (c) 1994 Brian Mork

>>> ADMIN
The MLHacker series is formatted to print out on 8.5"x11" sheets manually fed into an Epson LQ-850. I print at 8 lpi, which gives 82 lines per page. Back issues are available from ftp.cs.buffalo.edu in the \pub\msdos\ham-radio directory. E-mail server ham-server@grafex.cupertino.ca.us also has them in the directory \hamradio\newsletters. Note in the signature block that my packet radio address has changed.

>>> ALTERNATE BATTERY SOURCE
In April Jim forwarded me results of his efforts to modify 9.6 volt Makita power tool batteries. Cut directly from his Internet message, here are his observations (thanks Jim!):

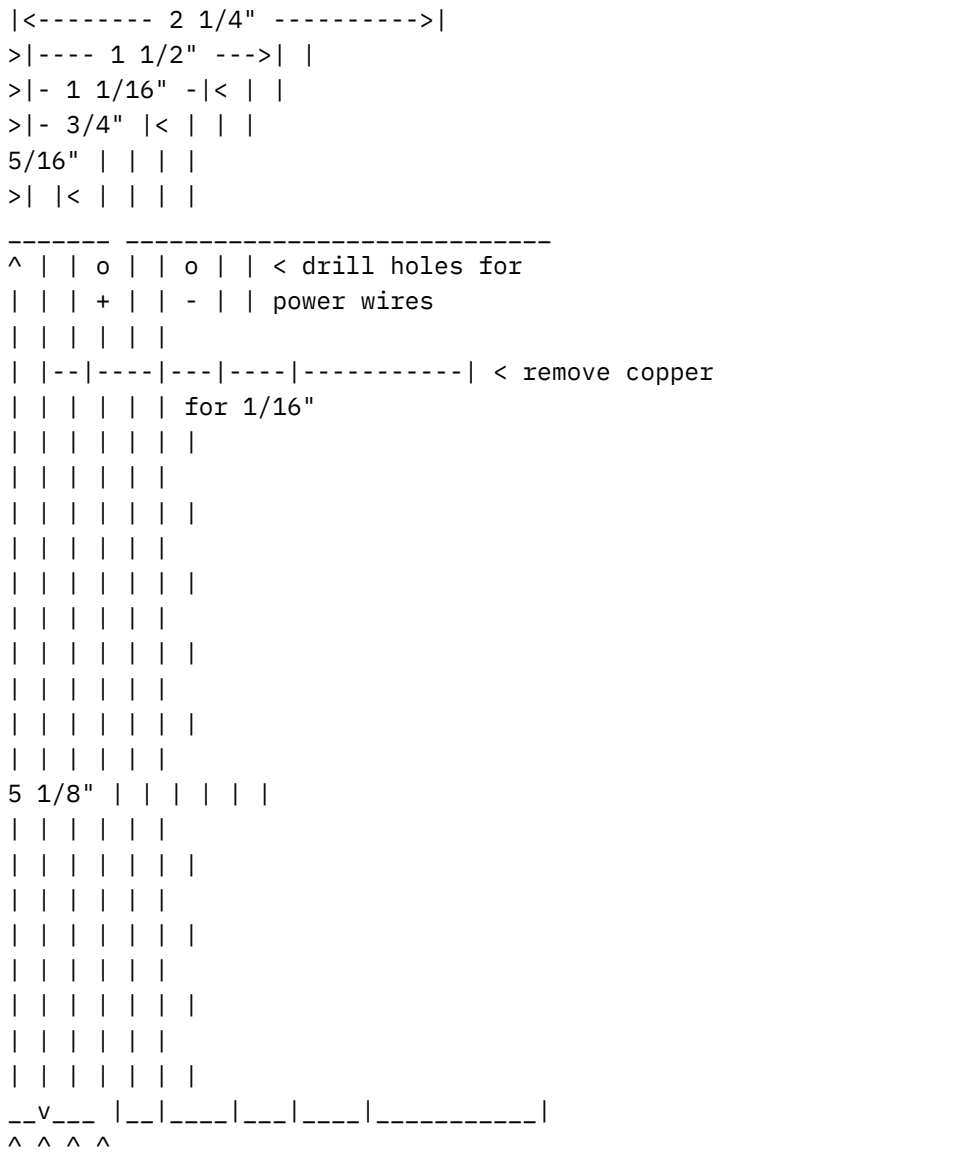
"Just the other day I did something I've been dreading for 6 months. I removed the stock battery from my Zenith ZL-2 Minisport and connected a variable voltage power supply directly to the computer's power terminals. After adjusting the supply to six volts, I powered up the computer and verified that it was working properly. Then, taking a deep breath, I slowly cranked the power up to ten volts. No explosions, no complaints from the Minisport power supplies, It took it just fine. Great, now I can use my 9.6 volt Makita batteries with the laptop as part of my portable packet station.

"Since the internal Zenith supplies are all switchers, current drain is inversely proportional to battery voltage. This means no power is wasted regardless of whether the voltage is 6.0 (stock Minisport battery) or 9.6 volts (as in my Makita pack). I measure 450 - 650 Ma drain with a 6.0 volt source (depending on backlight brightness), but with a 9.6 volt source, only 340 - 425 Ma is needed. The Makita batteries are about 1400 MAh capacity and run my ZL-2 for 3 hours with the backlight on full. Obviously, a 7.2 volt external would work also, with proportionally reduced operating time.

"I had to make a better way to get the external power to the machine than the alligator clips I was using. I thought I'd share what I built with you all. Here's how to make a fake battery pack for your Minisport.

"Begin by cutting a 2 1/4" by 5 1/8" piece of single sided glass epoxy Printed Circuit board material. Remove 1/16" strips of

copper along five lines as shown in the following diagram.



Remove copper along these four lines

"Drill the two holes close to the edge so solder will not interfere with the power contacts on the machine. Only the two small rectangular areas with holes will actually be energized. Isolating these minimizes the possibility of short circuiting the battery. Nevertheless, you should always disconnect the external battery when the fake unit is removed from the computer.

"You can remove strips of copper by double scoring the material 1/16" apart along the indicated lines, then gouging out the metal with a knife or wood chisel. With some patience, you can also do it with a hacksaw or a hand grinder. My favorite method is using a 1/8" drill bit in a small drill press as a router. I raise the table until the PC board is just touching the drill bit. Then one or two thickness of 3 x 5 card under the board

raises the copper just enough so I can route out metal along the lines by moving the board under the bit while it's turning at the highest speed. I have a piece of wood with a vertical fence screwed to one edge that I can "C" clamp to the drill table to help guide the PC board while routing.

"You will need to solder a power cable directly to the board, or glue some sort of jack on the board to accept a power cable through the battery cover hole. The NEGATIVE terminal is nearest the front of the Laptop. The POSITIVE terminal is the rearmost. You won't need a connection to the center terminal, it is used by the Minisport charging circuit. Use a minimum amount of solder and file the solder bumps down smooth.

"Complete the fake battery by gluing a block of wood about 1 inch high to the glass side of the PC board. This takes up the slack in the battery compartment so the board is pressed firmly onto the computer's power terminals. You will have to sand the block to just the right height, or glue on strips of cardboard for extra height if it's too short.

"One problem with using a higher than six volt battery with the Minisport is that the low battery voltage alarm doesn't work. It appears that by the time the 9.6 volt pack is discharged far enough to trip the alarm, it's going down so fast that there isn't time for an indication. Save your work often if you're near drop out time. It should be possible to construct a separate discharge alarm on the fake battery board that will trip at a higher voltage and give a couple of minutes warning.

"I have also created a real battery pack for my Minisport by using one of these routed out PC boards, and hot gluing five "C" size nicads to the top. It works as well as the 1700 MAh Minisport batteries but I have not figured out a way to use the Minisport charger. Also the exposed battery power terminals on the bottom require care to avoid short circuits.

>>> DRIVE EXPANSION PINOUT
On the back of the Minisport is a small plug with a rectangular external form and an internal "D" shape. I have been unable to identify a source for this connector, but several people have asked for the pinout. Here it is, compliments of wa8wzx. The top row of pins 1 through 19 are all sequential odd numbers. The bottom row has pins 2 through 20. Pins 4, 10, 12, 19 & 20 are all ground. Others are:

1 Disk Change 2 Side Select 3 Read Data
5 Write Protect 6 Track 0 7 Index
8 Write Enable 9 Write Data 11 Step
13 Direction Select 14 Drive Select 2
15 RPM 16 Motor On 17-18 Vcc

Please provide feedback! * Direct data 1-509-244-9260
* ARO Net KA9SNF@ka7fvv.#ewa.wa.usa
* Internet bmork@opus-ovh.spk.wa.us
73, Brian * 6006-B Eaker, Fairchild, WA 99011

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

2021. 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 02:14:32 UTC
From: charnoft@ac.wfu.edu
Message-ID: <31hlq8$5ld@eis.wfunet.wfu.edu>
Source record: 116957

I'm thinking about building a small amplifier for a 2m HT to use
in my car. 30 or so watts.

Anybody know where I could get some plans?

--
* * * * *
The more the pity that fools may not speak
wisely what wise men do foolishly.

2022. New

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 07:07:00 UTC
From: barry.davis@woodybbs.com
Message-ID: <93.1229.7584.0NFB2CD0@woodybbs.com>
Source record: 116771

VBARNET BBS is now carrying this conference.

--- Squish v1.01
* Origin: VBARNET * USA * (410)761-3406 or 922-8947 * PCB & OS/2 (1:261/1458)

2023. RF bridges

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 16:30:52 UTC
From: steve@hi.com
Message-ID: <steve-010894122450@brainiac.hi.com>
Source record: 116958

What's inside a General Radio RF bridge?

I'm about to embark on homebrewing an RF bridge. I've looked over a few ARRL Handbook designs, and the one in the ARRL antenna book vol 3. But I'm wondering if I couldn't do better by emulating GR and re-zeroing the bridge at every frequency change, rather than attempting to null the bridge over the full 2 to 30 Mhz range. I'm also curious about the design of GR's bridges. (I've never used one.)

Thanks,
-Steve

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

2024. Re: 2m mobile amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 17:14:20 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <31jahc$brc@adm09.iac.honeywell.com>
Source record: 116961

charnoft@ac.wfu.edu (Forrest T Charnock) wrote:
> I'm thinking about building a small amplifier for a 2m HT to use
>in my car. 30 or so watts.

> Anybody know where I could get some plans?

If you can lay hands on the Motorola RF Device Data Book, Vol II,
there is an excellent design by Helge Granberg for a ~30W amp in app note
AN791. Its based on the MRF240. There is also one for ~75W using the
MRF247.

A source for the Databooks, and the devices, is RF Parts, San Marcos Ca,
(619) 744 - 0700

GL es 73s de Alf NU8I/G4ABB

Alf Green | Tel (602) 863 5842 | An organised person is just
Honeywell IAC | Fax (602) 789 4990 | too lazy to hunt for things.
Phoenix AZ | alf@agreen.iac.honeywell.com |
==

2025. IC's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 17:34:52 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <31jbns$d0c@dawn.mmm.com>
Source record: 116959
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Hi all,
I am looking for two parts:
1. LM143H
2. DS0026CN

Have exhausted all the usual e.g. Mouser, Digi-Key, Newark, Richardson.
Thanks for any help.

--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

2026. Re: 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 18:05:53 UTC
From: mcf2@Isis.MsState.Edu
Message-ID: <31jdi1$a06@Tut.MsState.Edu>
Source record: 116960

Ramsey has a kit in their catalog for about $69 without the heatsink. Just give them a call for their new catalog. All kinds of neat stuff in there.

mcf

--
Michael C. Fortner "I have all this love to give, and so far all
N0YBC/5 28.380 MHz all I have to show for it is my ham radio!"
mcf2@ra.msstate.edu

2027. Re: Reply to thread about building a house

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 19:37:36 UTC
From: richard.krum@msfc.nasa.gov
Message-ID: <31jiu0$cpv@hammer.msfc.nasa.gov>
Source record: 116962

In article <stewart.4.000A2656@anl.gov>, stewart@anl.gov (Robin Stewart) says:
>
>
>>Yup. Need the 12ga wire to reduce voltage drop, and an isolated ground to
>>reduce noise. Circuit is dedicated to one PC type computer only, about 10 amp
>>draw absolute max. I have found the "negative resistance" characteristics and
>>pulse noise from PC power supplies needs a dedicated circuit for reliability. The
>>12ga wire helps avoid voltage drops, and the dedicated circuit eliminates noise
>>from other equipment. The "negative resistance" thing refers to the switching
>>power supply tendency to draw a lot more current as voltage drops in a brownout.
>>Heavy wire helps reduce voltage drop, and thus excessive current draw. The
>>UPS handles the rest of the problem <grin>!
>
>Good suggestion on the PC (switching) power supplies. However, be careful
>about the ground. An ground which is indepenent of the ground/neutral bond
>(located at the distribution panel) could create a nice ground loop. Most
>modern Ham gear has a separate RF ground and safety ground (since most is 12
>VDC), but this is not the case with tube based gear. Follow NEC to the letter
>on grounding, and avoiding the ground loops. They are a real pain.
>
>
Lousy description of "isolated circuit" on my part:

The ground and neutral on the "dedicated circuit" IS (must be) terminated inside the circuit breaker box in the basement in the normal, NEC-specified manner. This prevents ground loops. It also is the only set of hot, ground, and neutral in an independent cable run from the distribution box to the outlet. There are NO other devices in the circuit save the outlet at the computer location. This prevents other equipment from injecting noise into the circuit, unless they can "move" the ground and/or neutral in the distribution box. I woulda run it all in metallic conduit if I was really out for noise reduction, but my surge supressor/filter seems to solve the RF noise problem.

If I really needed a pseudo-isolated ground, I woulda run the circuits into a separate distribution box. In some juristictions, these boxes may have a separate ground lead to an earth ground. (not here, though). "High Isolation" transformers could be necessary, too. For my tube-type Ham radio stuff, I may have to run through a "ground window" that is connected to a good RF and electrical ground point for antennas, computers, and radios. Keeping RF outta the house is a whole different ballgame. I'm trying to keep pulse-type noise out of the computers, at present. RF adds a whole new set of problems! My HAM shack may have to be run in conduit to keep the RF out of the power (and my hide, if you know what I mean).

Power distribution is such fun (NOT!)

--Rich, KE4GNK (Tamperer with lightning and VHF radio)

2028. FAC Tetrode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 19:43:14 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <31jj8i$j15@dawn.mmm.com>
Source record: 116966
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I got a price quote for a 4CX350A/8321 from a company where
a Eimac make was priced at $171.00 but a similar Chinese make was priced
at $90.00.
Any thoughts on the quality? Should I pay the extra amount for Eimac
brand?
--
****
* The opinions expressed are mine and do not reflect the views of*
* Twinix Systems Inc. or 3M. *
****

2029. Re: Crystal Regenerative Receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 20:06:19 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <31jkjr$85s@ohlone.kn.PacBell.COM>
Source record: 116769

vimx (vimx@delphi.com) wrote:
: Does anyone know a circuit for a crystal controlled receiver which has a
: crystal whose frequency is the one you are receiving, not plus IF?
: I think some cheap toy walkytalkys might have such a circuit and it should
: only need 2 or 3 transistors.

The crystal in most walkie-talkies is used during transmit, and there is no crystal in the receive circuit, because it would be too narrow band.

You didn't say what kind of modulation you wanted, or what freq. And it isn't apparent why you would want to use an IF of zero Hertz. If you use a crystal in a LO to generate a freq close to the received freq, you could use a PLL for the FM detector, where the difference could be under a hundred KHz, maybe.

As far as I've seen, all circuits that were built to save on transistors were back in the 50's and early 60's. Everything since has not had the need to, since a transistor only costs a dime in quantities. Cheap toy walkie-talkies are just that: toys. They have little or no range, and they have a regenerative receiver that puts out more power than it picks up. A joke.

Circuits start out as a means to an end: to accomplish something. If you want to do something well, then determine what you want to do and build the circuit to do it. Try not to compromise to save a transistor.

The more IF stages you have, the narrower the bandwidth, and that's really necessary in today's crowded bands.

--
==========
John Lundgren - Elec Tech - Info Tech Svcs	Standard
Rancho Santiago Community College District	disclaim-
17th St. at Bristol \ Santa Ana, CA 92706	ers apply.
jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu	
==========

2030. Re: Info on old oscilloscopes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 20:08:22 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <31jknm$85s@ohlone.kn.PacBell.COM>
Source record: 116963
Cross-posted to: sci.electronics.repair,rec.radio.swap,rec.radio.amateur.homebrew

Michael Covington (mcovingt@aisun3.ai.uga.edu) wrote:
: If I may blow my own horn for a moment, the latest Electronics Now (which
: arrived today) contains an article I wrote called "New Life for Old
: Oscilloscopes," complete with a schematic of a Heath IO-12.

: What's amusing is that they bought the article from me in 1990, and I won-
: dered for a while if it had been forgotten. But the information is at
: least as useful today as it was then.
[...]
: --
: < Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
: < The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
: < Unless specifically indicated, I am not speaking for the University. > <><
: For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

Makes you wonder if they're getting like the U.S. Postal Service. Just a
slight delay.....

--
==
John Lundgren - Elec Tech - Info Tech Svcs	Standard
Rancho Santiago Community College District	disclaim-
17th St. at Bristol \ Santa Ana, CA 92706	ers apply.
jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu	
==

2031. RE: 1750 meter band

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-01 22:12:48 UTC
From: srghsjm@grv.grace.cri.nz
Message-ID: <31js0s$3h3@zephyr.grace.cri.nz>
Source record: 116770

There is LF activity in other places around the world other than the USA. Herb Balfour's activity in Canada has been mentioned.

Australia has had quite a long history of amateur-like activity in this band for many many years, although access to the band is provided by way of Australian experimental licenses. They have generally used about 190kHz, and various experiments have seen signals from Victoria in the East heard as far away as Western Australia and New Zealand (and that's a long way away).

New Zealand radio amateurs have the use of part of the LF spectrum, where they can use their own callsigns. This is not an amateur band as such, and does not appear on the amateur allocation chart in this country, but it is a "designated use" of amateurs here. The conditions are fairly simple, and are as follows (drawing from memory):

(1) Open to general grade licencees (there are two grades in New Zealand - General and Limited. The difference is that the Limited license does not need a morse pass, and is restricted to 6 metres and above).

(2) Operation is allowed after one has requested, and received, a permit from the administration (the Ministry of Commerce). This is not onerous, and the letter received just outlines the conditions here.

(3) Maximum power 5 watts EIRP. There are no feedline or antenna restrictions.

(4) Operation is between 165 and 190 kHz, although most activity settles around 180 kHz.

(5) Operation is on a non-interference basis, and amateurs have to tolerate interference. Chiefly the interference is power line carriers, but there are other sources from overseas.

(6) Operation is on an "until further notice" basis. In reality I can't see any amazing rush of users for this band so this is not likely to be a major problem.

I understand that French amateurs have considered trying to argue for a few bands in the LF area, at least one proposal of which was around 48kHz. LF operation is bound to be difficult in Europe due to the proliferation of the broadcasting service.

Papua New Guinea is also another country where I understand a few amateurs want to start experimentation using the New Zealand or

Australian type of rules, but I don't have an update.

Maybe there are other countries interested too.

73

Stephen

+---+
| Stephen McNeill Phone : +64-4-569 0180 |
| Image Processing Team Direct : +64-4-569 0183 |
| Landcare Research New Zealand Ltd FAX : +64-4-569 0181 |
| Box 38-491 Internet: srghsjm@gih.grace.cri.nz |
| Wellington Mail Centre Omnet : s.mcneill |
| New Zealand Packet : zl4hg @ zl4hg.wlg.nzl.oc |
+---+

2032. Source for transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 03:56:34 UTC
From: bsn@ziggy.ph.utexas.edu
Message-ID: <31kg5i$slq@geraldo.cc.utexas.edu>
Source record: 116773

Can someone recommend a source or sources for the following transistors:

D40N5
VCR-11N dual fet
U310 fet?

A single source for all three would be be ideal.

Thanks,
Barry W5KH
(bsn@fusion.ph.utexas.edu)

2033. Model rocket telemetry..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 04:27:11 UTC
From: ai351@leo.nmc.EDU
Message-ID: <9408020427.AA17926@leo.nmc.edu>
Source record: 116774

>A Varactor diode, sometimes called a varicap is a 'diode' who's capacitance
>is varied by a DC bias voltage; often used to electronically tune radios.
>Most of the major distribs. should carry them i.e. mouser, digi-key etc.

--> You would think so, considering their widespread use in TV tuners, etc.,
but I get Mouser, Digi-Key, and a few other catalogs and still have not
had any luck fiding a varactor. (I also need one, for the same circuit in
fact.) Marlin P. Jones & Associates (A surplus catalog) used to have a
matched set of 3 for something like 10 cents, but they don't have them
anymore. If anyone knows a source for these, I'd appreciate a reply.

--
-=-
ai351@leo.nmc.edu David Brodbeck
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-

2034. PACKET RADIO MODEM

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 07:33:12 UTC
From: jcmonier@saclay.cea.fr
Message-ID: <31ksro$elt@anemone.saclay.cea.fr>
Source record: 116772

I'm searching a schematic diagram (or a 'mylar' with electronics implementation) for a project of home made packet radio modem.

It's for run on a IBM PC XT (yes a XT from 1980 with a 8086 CPU at 4,77 Mhz !!)
at 300 & 1200 bps on VHF & UHF (2m & 70cm)

Thanks for your help

```
___ _____
.'/,-Y" "~-.
l.Y ^. DON'T USE DRUGS BUT... USE CONDOMS :-)
/\ _\_
i ___/" "\
| /" "\ o !
l ] o !__./ MONIER Jean-Christophe
\ _ _ \.___./ "~\ E-Mail : jcmonier@muguet.saclay.cea.fr
X \/ \ ___./ MS-Mail: monier@ulysse.cea.fr
( \ ___. _..--~~~" ~`-.
` Z,-- / \ ATHESA France
\__. ( / ______) Agence C.E.A. - Defense
\ l /------~~" / BP 28
Y \ / 91192 GIF SUR YVETTE
| "x______.^ Fax : (1) 69.08.87.55
| \ Tel : (1) 69.08.56.41
j Y
```

2035. Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 09:43:59 UTC
From: mjsilva@ted.win.net
Message-ID: <445@ted.win.net>
Source record: 116775

Can someone explain the differences I should expect to find between "identical" transistors in plastic and metal? My specific case involves some PN5179s I have. Is there any case where these might not work in a circuit designed for a 2N5179? Aside from having less heat dissipating ability, are the plastics in any way inferior?

Thanks for any info.

Mike, KK6GM

2036. Re: 2m mobile amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 11:57:55 UTC
From: richmond@eosms.aa.wpafb.af.mil
Message-ID: <1994Aug2.115755.7479@afit.af.mil>
Source record: 116780

Another source for the amplifiers in the Motorola book has been
Communications Concepts, Inc of Dayton OH (513)296-1411

Rich N4AFX

2037. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 12:33:16 UTC
From: zlau@arrl.org
Message-ID: <1994Aug2.123316.13010@arrl.org>
Source record: 116790

Joe Miller (jmiller@peds.eyes.arizona.edu) wrote:
: Once upon a time, there was a great "technical"
ham radio mag called "Ham Radio".
: It was apparently too technical for the market,
but had a great run and I still access back issues.

Ham Radio failed because there wasn't enough to
publish. This may be partly due to the publisher
at the time--he may not had the talent needed to
convince technical types to spend time writing up
their latest creations.

A secondary problem is the parts used. The cheapest
parts these days isn't surplus--its samples from
manufacturers. They usually work pretty good too--why
would they bother sending out grade-outs as samples to
convince people to use their products? Of course, not
all these neat and nifty products actually sell--so you
have parts that really *are* unobtainable.

There is also the temptation to use parts in your junkbox
that that are absolutely *perfect* for the application.
For instance, a quarter wavelength of 32 ohm coax was
used in my latest 2 meter beam--I wanted to keep it as
light as possible (2 mile hike with 1700 ft elevation
gain, with 2M SSB/CW/FM, 10 GHz SSB/CW/FM gear). By coiling it
an placing it in the boom (waveguide below cutoff), it works
as a very lightweight balun (instead of heavy ferrite beads).

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2038. Re: FAC Tetrode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 12:55:01 UTC
From: kludge@netcom.com
Message-ID: <kludgeCtwrvq.L8J@netcom.com>
Source record: 116776
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <31jj8i$j15@dawn.mmm.com> tahir@tcdsp1.mmm.com ("Tahir Kayani") writes:
>I got a price quote for a 4CX350A/8321 from a company where
>a Eimac make was priced at $171.00 but a similar Chinese make was priced
>at $90.00.
>Any thoughts on the quality? Should I pay the extra amount for Eimac
>brand?

I have had serious problems with the Chinese power grid tubes, and would
tell you to avoid them if at all possible. However, I will also recommend
the Svetlana tubes from Russia, which are similarly priced and of the
same quality as their Eimac equivalents. I have been very happy with the
Svetlana products.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

2039. Re: VHF/UHF Coax switches (Whaddabout Diodes?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 12:56:20 UTC
From: zlau@arrl.org
Message-ID: <1994Aug2.125620.13310@arrl.org>
Source record: 116793

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
: In article <CtJx2M.6GK@yuma.ACNS.ColoState.EDU> galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:
: >What about using diodes? How big should a diode be to switch (hold back)
: >100W on 2m? (How do you keep 100W of RF out of your GaAs FET Preamp?).
: >Just wondering,
: >Galen, KF0YJ

: Sure, you can use PIN diode switches instead of relays. *Matched* 100
: watt switches are practical. However, to emulate the double pole double
: throw relays used to switch an inline amp is a bit more complicated than
: just doing a TR switch. If you don't need the switching speed, the relays
: remain simpler and cheaper.

: Your switching bias has to be stronger than the RF signal in order to
: keep a diode switch in the OFF state. That becomes a bit challenging
: at the 100 watt level where the RF voltage can be 70.7 V RMS with
: unity SWR. If SWR rises, the voltage needed can become ridiculous.

Incorrect. At zero or reverse bias the diodes act as small capacitors, rather than diodes, to the RF signal. Properly used, the device is too slow to act as a diode to the RF. Thus, it isn't unusual for a 100 watt switch to run of 12 volts. Page 34-6, 1988 ARRL Handbook is an HF example. But, you do have a breakdown voltage to contend with. When you start shorting out parts of your matching network (arcing), it is entirely possible to develop unusually high voltages (inductors like to keep the current constant, even if it means developing many kilovolts). This is what can kill diodes.

Most people look at charge/current models when designing PIN diode switches. They work fine till you run out of charge in the intrinsic region. I've not seen someone try to teach this from a voltage bias standpoint, though I suppose anything is possible with enough work :-). You do want to explain why PIN diodes don't work as well at lower frequencies--or why you need more current there for a given power level.

At VHF and high power, the small capacitors can be a problem in that enough isolation can be difficult to get. You can add quarter wave line sections and shunt elements, but the circuitry gets complex. Loss may also be a problem--do you want another 0.2 or 0.3 dB of loss ahead of your preamp? Reliability is another problem--how do you insure that one minor problem doesn't destroy everything? Relays inherantly isolate two ports--unless you wire it up wrong. Trying to interlock PIN diodes isn't easy--I've not seen much in the way of failsafe circuits to copy.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2040. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 14:05:21 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <31ljr1$s5o@hobbes.cc.uga.edu>
Source record: 116777

Michael Silva (mjsilva@ted.win.net) wrote:
: Can someone explain the differences I should expect to find between
: "identical" transistors in plastic and metal? My specific case
: involves some PN5179s I have. Is there any case where these might not
: work in a circuit designed for a 2N5179? Aside from having less heat
: dissipating ability, are the plastics in any way inferior?

My Motorola manual generally lists _higher_ heat dissipating ability
for plastic than for metal without a heat sink, although naturally,
metal is what you want if you are going to put a heat sink on it.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

2041. Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 15:14:42 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <CtwyCJ.s2@news.ess.harris.com>
Source record: 116778

Hello all -

I am building a project which requires a 455khz xtal for a
Beat Frequency Oscillator (BFO). I've already checked mouser,
digikey, dc electronics, all electronics, cw crystals, and also the jan
catalog (nothing that low in freq). I need this xtal!

Background on the project: it's a SSB generator, and yes, I have
entertained the idea of using a different IF, one that uses easier
to find parts! But I want to build the first one per the original
design, then make changes in the successive versions. Besides, I
have all the other parts (i.e. 455khz filter) and this part is
standing between me and SSB!

Any help appreciated.
73, Gary N2JGU
gmd@rfc.comm.harris.com

2042. Re: Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 15:34:33 UTC
From: wmeahan@ef0424.efhd.ford.com
Message-ID: <wmeahan.165.000F93DE@ef0424.efhd.ford.com>
Source record: 116782

In article <CtwyCJ.s2@news.ess.harris.com> gdian22@rfc.comm.harris.com (Gary M Diana) writes:

> I am building a project which requires a 455khz xtal for a
>Beat Frequency Oscillator (BFO). I've already checked mouser,
>digikey, dc electronics, all electronics, cw crystals, and also the jan
>catalog (nothing that low in freq). I need this xtal!

Check with Surplus Sales of Nebraska (address/phone in QST, CQ, etc.)
They support old Collins gear which has, tada, a 455KHz IF. Tend to be a bit pricey but stuff is in good condx and the service has been excellent when I've purchased from them.

73 de wa8tzg

--
Bill Meahan, Senior Developer | wmeahan@ef0424.efhd.ford.com
Electrical & Fuel Handling Division, Ford Motor Company
"Computers are the most stupid machines in the world -
they do EXACTLY what you TELL them to do!" (Gus Ogletree)

2043. Re: RFI from Heath "Big Ben" Chime Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 16:17:26 UTC
From: btoback@netcom.com
Message-ID: <btobackCtx194.9ru@netcom.com>
Source record: 116779

In article <kludgeCtrAvq.FG4@netcom.com> kludge@netcom.com (Scott Dorsey) writes:
>In article <btobackCtpsCB.DI1@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>>
>>Has anyone else had this problem? And what did you do about it? And
>>how the heck can I get a 30 MHz FM signal from that clock?!
>
>The first step is to add capacitance to the power supply line as close
>to the source as possible (and a .1 MFD ceramic is a good start). Most
>of the worst of the RF is radiated through the power lines, so if you
>cut off the noise at the chip, you're doing well. After this, you can
>start adding capacitance to the LED driver outputs, just on each pin of
>the matrix to ground. Again a .1 MFD ceramic from the junk box is a
>good start. Also look for bad grounds, corroded ground wires, and the
>like.

Fortunately, the _clock_ is about as RF-friendly as a digital gadget
is going to get: it counts the 60Hz line, and drives small incandescent
lamps without multiplexing. The chimes seem to be the culprit here. I'll
bypass the AC lines as you suggest, but I'm very curious as to the source
of the frequency modulation. There's almost no AM on this radiated signal,
and the FM is very high quality :-/.

>I deal with this stuff all the time... at home my solution has been just
>to banish it from the house.

This is not an option, as the clock is the main tool for managing the
3-year-old: "When the clock bongs two more times, it's time for bed."

-- Bruce

2044. Re: Model rocket telemetry..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 17:41:02 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <31m0fe$6k1@tekadm1.cse.tek.com>
Source record: 116784

ai351@leo.nmc.EDU (David Brodbeck):

:>A Varactor diode, sometimes called a varicap is a 'diode' who's capacitance
:>is varied by a DC bias voltage; often used to electronically tune radios.
:>Most of the major distribs. should carry them i.e. mouser, digi-key etc.

:--> You would think so, considering their widespread use in TV tuners, etc.,
:but I get Mouser, Digi-Key, and a few other catalogs and still have not
:had any luck fiding a varactor. (I also need one, for the same circuit in
:fact.) Marlin P. Jones & Associates (A surplus catalog) used to have a
:matched set of 3 for something like 10 cents, but they don't have them
:anymore. If anyone knows a source for these, I'd appreciate a reply.

They're also known as voltage variable capacitance diodes, Varicaps (tm),
and other names. You'll find "Silicon Planar Variable Capacitance Diodes"
on page 106 of Digi-Key catalog #944.

Roy Lewallen, W7EL
roy.lewallen@tek.com

2045. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 17:41:36 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <31m0gg$6m2@tekadm1.cse.tek.com>
Source record: 116785

mjsilva@ted.win.net (Michael Silva):

:Can someone explain the differences I should expect to find between
:"identical" transistors in plastic and metal? My specific case
:involves some PN5179s I have. Is there any case where these might not
:work in a circuit designed for a 2N5179? Aside from having less heat
:dissipating ability, are the plastics in any way inferior?

The plastic ones usually aren't specified for as severe environmental conditions as metal ones. Plastic transistors are regarded to have a higher failure rate under conditions of extremely high temperature and humidity. In general, this is of interest only to designers of military-type equipment; for the rest of us, plastic is just fine.

(It's easy to see why transistors have a maximum temperature rating. But didn't you ever wonder why there's a minimum, too? Why, it's because if they get too cold, they freeze their cans . . .)

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

2046. Re: Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 18:53:40 UTC
From: dave@diusys.cms.udel.edu
Message-ID: <31m4nk$7ig@news.udel.edu>
Source record: 116786

Gary M Diana (gdian22@rfc.comm.harris.com) wrote:
: Hello all -

: I am building a project which requires a 455khz xtal for a
: Beat Frequency Oscillator (BFO). I've already checked mouser,
: digikey, dc electronics, all electronics, cw crystals, and also the jan
: catalog (nothing that low in freq). I need this xtal!

: Any help appreciated.
: 73, Gary N2JGU
: gmd@rfc.comm.harris.com

You might want to try International Crystal at 800 426-9825
They make a wide variety of custom crystals, but I'm not sure
they go that low with 'em.

73, Dave WA3U

2047. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 19:08:30 UTC
From: stirra@wwc.edu
Message-ID: <31m5je$boo@krason.wwc.edu>
Source record: 116781

In article <31m0gg$6m2@tekadm1.cse.tek.com>, royle@tekgp4.cse.tek.com (Roy W Lewallen) writes:
|> mjsilva@ted.win.net (Michael Silva):
|>
|> :Can someone explain the differences I should expect to find between
|> :"identical" transistors in plastic and metal? My specific case
|> :involves some PN5179s I have. Is there any case where these might not
|> :work in a circuit designed for a 2N5179? Aside from having less heat
|> :dissipating ability, are the plastics in any way inferior?
|>

My recollection is that the 2N5179 is a four terminal transistor, with the forth lead connected to the case. It is a UHF transistor, with fte of 1.8GHz or so, and it may be of help in some circuits to be able to ground the metal case. I'm surprised that a plastic '5179 is available.

-- Ralph Stirling Project Engineer
stirra@wwc.edu Walla Walla College
509/527-2071 School of Engineering
FAX: 509/527-2867 204 S.College Ave
College Place, WA 99324

2048. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 19:25:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940802192559OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 116792

>Moulded plastic or metal can? As with most things in life, it
>depends...

I seem to remember reading (Pease?) that some metal cases admit
light (around the leads). The TI transistor databook seems to
say that the plastic case is opaque (for each transister def...).

2049. Re: Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 19:48:26 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31m7ua$gmu@hpscit.sc.hp.com>
Source record: 116783

In article <31m4nk$7ig@news.udel.edu>,
Dave Dabell <dave@diusys.cms.udel.edu> wrote:
>
>: I am building a project which requires a 455khz xtal for a
>: Beat Frequency Oscillator (BFO). I've already checked mouser,
>: digikey, dc electronics, all electronics, cw crystals, and also the jan
>: catalog (nothing that low in freq). I need this xtal!
>
>: Any help appreciated.
>: 73, Gary N2JGU
>: gmd@rfc.comm.harris.com

Get a series resonant 5 MHz. crystal. However, put a 220 uH. inductor
across it to resonate out the holder capacitance. Then put a 4.7 pF.
capacitor in series with the capacitor/inductor combination to make it
oscillate in extreme parallel mode. This will shift the frequency up
about .1% to 5.005 MHz. Divide that frequency by 11 with
a 74HC161 and you get 455 kHz. You could also use 10, 15, or 20 MHz.
and divide by 22, 33, or 44 respectively.

5, 10, 15, and 20 MHz. xtals are available everywhere. Most are parallel
resonant, so you'll have to specifically ask for series resonance
(unless you can get by with your BFO being at 454.45 kHz. instead of 455
kHz.).

Rick Karlquist
rkarlqu@scd.hp.com

2050. Re: Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 21:36:34 UTC
From: monta@image.mit.edu
Message-ID: <MONTA.94Aug2173634@image.mit.edu>
Source record: 116787

gdian22@rfc.comm.harris.com (Gary M Diana) writes:

> [needs 455 kHz BFO crystal]

Yes, this is getting a bit low for fundamental AT-cut crystals, but manufacturers can certainly supply crystal resonators at 455 kHz: check with ICM or Piezo. Some cuts have useful modes at sub-kHz.

You might also consider a ceramic resonator; I think Digi-Key carries these (from muRata or Toko). The technology is the same as the ceramic filters you mention. Lower Q, thus higher phase noise. Also, you can divide down from a crystal source at, say, 4.55 MHz. (Diode mixers like the nice square waveform, but this is nothing to get excited about for a BFO application.) Finally, if you want to cobble up something quick, don't overlook a simple LC oscillator, which can be quite stable.

Peter Monta monta@image.mit.edu
MIT Advanced Television Research Program

2051. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 22:13:51 UTC
From: wk@muscle.frc.maf.govt.nz
Message-ID: <31mgev$ism@muscle.frc.maf.govt.nz>
Source record: 116789

Moulded plastic or metal can? As with most things in life, it
depends...

Plastic and metal mostly use identical dies/bonding wires. This means
that peak current capability and voltage breakdown levels are usually
the same (check the data sheets!) or only slightly lower.

Thus for low duty cycle use, plastic can often be used in place of the
metal packaged version, resulting in a reduction of board size (TO-220
instead of TO-3), as well as weight (portable gear).

In really low duty applications, you may be able to use TO-220-
Isolated, which does away with things like mica isolating washers and
heat conducting paste.

Needless to say, moulded plastic transistors are cheaper, important if
you are designing for large volume production, or if you are on a
tight budget :-)

Does anyone know if nasties like BeO are used in plastic 'exploding'
packs? If so, a good reason to use metal for prototyping.

Hope this helps.

Cheers,

Wilbert (ZL2BSJ)

--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

2052. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 22:18:20 UTC
From: hpaik@silver.sdsmt.edu
Message-ID: <hpaik.81.2E3EC62C@silver.sdsmt.edu>
Source record: 116798

I think QEX give us good informations and it is cheap too.
I hope QEX/QST give us (or down loadable from ftp site)
a full source code of the project, not the binary code
nor compiled code, without buying the kit.
KF0BI H.W. Paik

2053. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 22:24:27 UTC
From: rheiss@harp.aix.calpoly.edu
Message-ID: <1994Aug02.222427.162547@zeus.aix.calpoly.edu>
Source record: 116788

So there were recent articles by Dr. Rhode in both QST and QEX on the same subjects? I wonder what QST readers missed.

2054. Re: 2m mobile amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-02 23:48:59 UTC
From: match@ee.elen.utah.edu
Message-ID: <match.5.2E3EDB6A@ee.elen.utah.edu>
Source record: 116791

As a club project, we built the 2-m amp described in 73 a few months back. It uses one Motorola MRF1946 transistor.

The design is very easy to duplicate. You can make the circuit board using masking tape an an X-acto knife. Don't bother adding the relay-compensation capacitor, it's a waste of time.

This was the first time some of the club members ever picked up a soldering iron, yet every one of them worked first time (barring a few wiring errors!)

Cost of parts was about $35, excluding a box to put the thing in and a heat-sink.

Marvin Match KA7TPH

2055. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 03:00:03 UTC
From: mtracy@arrl.org
Message-ID: <rec.radio.info-arrl.email.info_775882802@ve6mgs.ampr.ab.ca>
Source record: 116912
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command in your message.

IMPORTANT: Please use the quit command in your message. This will prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling written requests. Any questions on the info-server or the content of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the reply address is redirected to keep bounced messages from endlessly looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the internet better access to the knowledgeable technical staff here at ARRL HQ. Questions relating to Amateur Radio and related technical topics are welcome. To use this service, send a normal e-mail message to tis@arrl.org with your question spelled out in plain english. For best service, be as specific as possible and keep your line length in messages to a maximum of 80 characters. Due to personnel limitations, priority will be given to questions from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the file prospect (send prospect) for information on how to easily get started in this fun hobby.

FILENAME SIZE DESCRIPTION
--- --- ---
PROSPECT.TXT 2k How to get your Amateur Radio license
EXAMS.TXT 52k Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k Examinations - what to bring - requirements
USERS.TXT 6k List of HQ Email addresses
ARRLCAT.TXT 39k Catalog of ARRL Publications - commercial content
JOIN.TXT 2k How become an ARRL member
SERVICES.TXT 5k A condensed list of ARRL membership services
TOUR.TXT 28k An electronic tour of ARRL Headquarters
DIR.HQ 5k Visiting ARRL HQ - directions and tour information
HFBANDS 7k Breakdown of users of HF spectrum
Q-SIGS 1k ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k W1AW schedule of transmissions and operation
PRODREV1.TXT 12k Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k QST Bibliographies List
RFIGEN.TXT 37k How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k Lots and lots of ham/electronic company addresses
KITS.TXT 6k List of companies that sell kits
BBS.TXT 12k List of ham-radio land-line bulletin boards
FAQ1.TXT 25k Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k Amateur Radio Advanced and Technical Questions

American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

2056. Looking for voice storage device.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 04:40:11 UTC
From: tkomatsu@ccmail.NImc.go.JP
Message-ID: <9407037758.AA775888811@ccmail.nimc.go.jp>
Source record: 116795

Hello, OM.

I am looking for ISD1020AP made by Information Storage Devices Inc.
I couldn't get from any shop/agency in Japan. Now, I am planning to import
this.

If someone bought except in Japan, please tell me costs, orders,
and some advices else.

Thank you.

Toshiki KOMATSU / Dept. of Chem., Univ. of Tsukuba.
JF7WED@JF7WED.14.JNET1.JPN.AS

2057. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 04:56:15 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.775889642@atl1>
Source record: 116796

John, I agree with you 100%. I've never been in the publishing business
but I thought the same as what you said, when I read the original piece.
By his logic, QST would be bigger than that great technical mag -
COMPUTER SHOPPER! to which i don't subscribe on ethical principles - I
like trees! :)

2058. 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 05:53:10 UTC
From: aq760@yfn.ysu.edu
Message-ID: <31nbc6$4u1@news.ysu.edu>
Source record: 116794

I need a schematic for a small, vacuum tube 6m amplifier... I'd like it to be in the area of 10 watts... nothing fancy, just a n amplifier I can make for cheap. Thanks.

2059. Search: 12V to 30V 2A DC-converter circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 09:45:51 UTC
From: MKERP@canberra.rz.fh-offenburg.de
Message-ID: <MKERP.27.775907151@canberra.rz.fh-offenburg.de>
Source record: 116797

Hello!
My 2m V-MOS driver stage (about 20W output) needs 30V, max. 2A. Because the transverter, where the driver will be placed, operates with 12V, I need a DC-DC-converter.
Now I am searching a proper working circuit (not to expensive) with following specs:
DC-input: 11-15V (battery operation, voltage can change)
DC-output: 30V, 2A (continous), short-circuit protection or current limiting would be a good feature

Perhaps the LT1070 from Linear Technology will work, do you have any applications?
Please Mail to m.kerp@fh-offenburg.de or mail-adress listed in the header.

Excuse my bad english, 73 Mike (PR: DL1GNM@DB0FRB.DEU.EU)

2060. Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 10:48:19 UTC
From: randolph@est.enet.dec.com
Message-ID: <31ob13$e3e@mrnews.mro.dec.com>
Source record: 116803

Newby at oscillator design asks:

I recently picked up a couple of random 10 MHz crystals at a flea. I've been attempting to use these in a simple little crystal calibrator circuit. The problem is that it oscillates a little too fast, around 10.002-10.005 MHz, depending on what I have for capacitance in the circuit. It seems that putting enough capacitance in to get the frequency down to 10.000 kills the oscillation. Ckt is a Pierce oscillator, if it matters.

I assume what I have here is a series resonant crystal...? How do you apply these... put some inductance across it to resonate out the capacitance?

I haven't been able to find much discussion of this in print...

-Tom R. N1OOQ randolph@est.enet.dec.com

2061. Switched Capacitor Filters ...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 13:21:28 UTC
From: tavernin@sun1.interlan.com
Message-ID: <Ctynru.C49@rd1.racal.com>
Source record: 116802

I'd appreciate any pointers to information on these wonderful devices ...

Thanks,

Victor Tavernini, KE4JMY/AA
Racal-Datacom, Inc.

tavernin@sun1.interlan.com

2062. Re: Switched Capacitor Filters ...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 15:02:56 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31obj0$pu@hpscit.sc.hp.com>
Source record: 116804

Linear Technology (408-432-1900) puts out a filter
design handbook complete with software.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

2063. Re: Source for Crystals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 15:04:08 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <CtysIx.K2q@news.ess.harris.com>
Source record: 116809

Hello all -

About the 455khz crystals...

1. The circuit design really calls for resonators. I saw the
symbol for xtal and took off shopping for the part. Turns
out Digikey has a 455khz resonator, for about a buck each.

2. I received about 10 replies, 70% said to go the resonator
route, the other 30% described various methods of obtaining
455khz by dividing higher freq xtals.

I replied via email to everyone I heard from... if I missed you, my
apologies. I appreciate the help/info, I learned something new
here. When I get the parts (probably next week) and get this project
going, I'll report back as to it's operation.

73 for now. Gary N2JGU

2064. Repeater for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 15:39:04 UTC
From: abjanes@aol.com
Message-ID: <31odmo$abd@search01.news.aol.com>
Source record: 116799

I have the following for sale:

Regency UHF Repeater (estimate 10-15W power)

Data Signal Inc., Autopatch Model RAP 200
Model # RAP 200

Phelps Dodge Communications duplexers (4)

This is commercial grade equipment previously used for a mobile
phone/pager network
running on the 400MHz band. Tx 462 MHz, Rx 467 MHz.

Highest bidder takes it!

-- Atle Bjanes

Atle Bjanes, voice (717) 534-5006, (717) 626-2553 (home)

2065. Re: VHF/UHF Coax switches (Whaddabout Diodes?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 15:56:36 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug3.155636.7387@ke4zv.atl.ga.us>
Source record: 116806

In article <1994Aug2.125620.13310@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
>
>: Your switching bias has to be stronger than the RF signal in order to
>: keep a diode switch in the OFF state. That becomes a bit challenging
>: at the 100 watt level where the RF voltage can be 70.7 V RMS with
>: unity SWR. If SWR rises, the voltage needed can become ridiculous.
>
>Incorrect. At zero or reverse bias the diodes act as small capacitors,
>rather than diodes, to the RF signal. Properly used, the device is
>too slow to act as a diode to the RF. Thus, it isn't unusual for a
>100 watt switch to run of 12 volts. Page 34-6, 1988 ARRL Handbook is
>an HF example. But, you do have a breakdown voltage to contend with.
>When you start shorting out parts of your matching network (arcing),
>it is entirely possible to develop unusually high voltages (inductors
>like to keep the current constant, even if it means developing many
>kilovolts). This is what can kill diodes.

Er, uh, (blush), of course you are correct. I was thinking of *switching*
diodes when I wrote that, not PIN diodes. With PINs, the trick is having
enough forward bias current to keep them in the ON state. Ah, well. :-(

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2066. Need info on a RX-only ant tuner...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 16:51:58 UTC
From: x90galbrait1@wmich.edu
Message-ID: <1994Aug3.125158.20194@wmichgw>
Source record: 116800

Could anyone help me design and build a small antenna tuner for a receiving setup? It will be used only to receive, so large caps and induct's are unneccesary...
Where can I find the circuit? What values should I use for the cap and inductor (tapped)?
Thanks,
Chris KA8WFC

2067. Re: 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 16:57:10 UTC
From: jdc@cci.com
Message-ID: <CtyxrA.2LL@sunsrvr6.cci.com>
Source record: 116812

In article <31hlq8$5ld@eis.wfunet.wfu.edu>,
Forrest T Charnock <charnoft@ac.wfu.edu> wrote:
> I'm thinking about building a small amplifier for a 2m HT to use
>in my car. 30 or so watts.
>
> Anybody know where I could get some plans?
>--

Try the ARRL Handbook. My 1974 copy has a 25 and 45 watt amp for
2-meters.

Strangely enough, older editions have more useful information.
The new ones cover things that apply to every-ham, like 45 foot
dish antennas mounted on navy surplus gun mounts. Or really
useful things that can't be found anywhere else, like ASCII/Baudot
tables and other newfangled computer stuff.

And then there's projects using parts cheaply and easily available
in the 90's. Well, I'm off to the local Radio Shack for some dual-
gate MOSFET's.

73...Jim

2068. Re: Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 17:22:39 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31ojov$937@hpscit.sc.hp.com>
Source record: 116801

In article <31ob13$e3e@mrnews.mro.dec.com>,
Tom Randolph <randolph@est.enet.dec.com> wrote:
>
>I recently picked up a couple of random 10 MHz crystals at a flea. I've been
>attempting to use these in a simple little crystal calibrator circuit. The
>problem is that it oscillates a little too fast, around 10.002-10.005 MHz,
>depending on what I have for capacitance in the circuit. It seems that putting
>enough capacitance in to get the frequency down to 10.000 kills the oscillation.
>Ckt is a Pierce oscillator, if it matters.
>
>I assume what I have here is a series resonant crystal...? How do you apply
>these... put some inductance across it to resonate out the capacitance?

Right about being series resonant. However, you want to put the inductance
in *series* with the crystal, start with 10 uH.

>I haven't been able to find much discussion of this in print...

Crystal oscillator design, in my experience, is self taught or learned
from other engineers. Books aren't much help.

>-Tom R. N1OOQ randolph@est.enet.dec.com

Rick Karlquist N6RK
rkarlqu@scd.hp.com

2069. Kenwood 742

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 18:01:37 UTC
From: snooky@csuohio.edu
Message-ID: <1994Aug3.180137.11251@news.csuohio.edu>
Source record: 116810

[No readable article body recovered]

2070. Kenwood 742 manuals

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 18:10:10 UTC
From: kevin@marconi.w8upd.uakron.edu
Message-ID: <31omi2$ju2@kira.cc.uakron.edu>
Source record: 116811

I am looking for someone that might have tried to order all of the parts
to put together another 742 without any of the band units. I already have
one and don't want to spend the $7xx bucks for another just to get the
2m and 440(or 220), if I don't have to.

Kevin
kevin@marconi.w8upd.uakron.edu
snooky@babbage.cba.csuohio.edu

2071. Multiplexed microwave links

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 18:13:29 UTC
From: kevin@marconi.w8upd.uakron.edu
Message-ID: <31omo9$ju2@kira.cc.uakron.edu>
Source record: 116814

Has anyone seen any cheap multiplex microwave link products. Our club is trying to phase out the UHF links for our 2m repeater and we would rather buy something with 3-6 audio channels at 900 or above. We have looked into Mot. Starpoint 2000's, but they are too pricey, any suggestions??

Kevin

2072. homebrew GPS radio front end

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 21:41:48 UTC
From: ken@helios.njit.edu
Message-ID: <1994Aug3.214148.16052@njitgw.njit.edu>
Source record: 116805

Hello, does anyone in this group remember seeing an article on a home brew GPS receiver? I recall seeing such an article about 3 years ago in an ARRL proceeding of some kind, but I do not recall the title. Also, does anyone know where I can get a reprint of it if it is available? Please e-mail me as I am not a regular reader here. Thanks.

--
Kenneth Ng: ken@helios.njit.edu
"No problem, here is how you make one" -- R. Barkley, ST: TNG

2073. Re: Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 22:37:53 UTC
From: tomb@lsid.hp.com
Message-ID: <CtzDJ5.E7o@hpcvsnz.cv.hp.com>
Source record: 116815

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: In article <31ob13$e3e@mrnews.mro.dec.com>,
: Tom Randolph <randolph@est.enet.dec.com> wrote:

: >I haven't been able to find much discussion of this in print...

: Crystal oscillator design, in my experience, is self taught or learned
: from other engineers. Books aren't much help.

There have been some pretty good articles in RF Design magazine over
the past 5 or so years on crystal oscillators. Most seem to be
written "by engineers for engineers", so they fall into the
second recommendation from Rick.

73, K7ITM

2074. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-03 23:43:07 UTC
From: kchen@apple.com
Message-ID: <31pa2b$bis@apple.com>
Source record: 116807

bmork@opus-ovh.spk.wa.us (Brian) writes:

>yee@mipg.upenn.edu (Conway Yee) writes:

>> If QEX is truly only 24 pgs, there is barely an excuse NOT to have it
>> in QST. A typical QST is circa 240 pgs long. What is an extra 24
>> pgs?

>A quibble: It's nominally 32 pages long.

A quibble-quibble: about 4 of the internal pages are advertisments which
seem to already be in QST. :-)

However, I really prefer that the ARRL keeps QEX a separate publication.
As a special interest publication, its editorial board can cater to the
needs of the technical readers rather than succumb to more general pressure.
The recent "How technical is 'too technical'" question posed by Jon Bloom
and what he did in response to the survey is a good example of that.

73

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

2075. want plans for"interface for cw with PC"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 00:20:01 UTC
From: szhall@chip.ucdavis.edu
Message-ID: <CtzI9D.Gn9@ucdavis.edu>
Source record: 116816

I understand there are some very simple plans for making an interface so you can send CW with your PC--Do you know where I can get the plans or a kit? Thanks for your help..73es..Jeff

2076. My el-cheapo VHF swr meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 00:38:14 UTC
From: sbertsch@magnus.acs.ohio-state.edu
Message-ID: <31pd9m$af6@charm.magnus.acs.ohio-state.edu>
Source record: 116808
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In the recent past I posted a question - how do I make a cheap VHF swr meter? Well, I got lots of helpful replies (thanks to all!); most of these involved either 1) a PCB microstripline, or 2) the pickup loop under the coax trick. I started building no.2, but then...

Last weekend I was at the local ham radio emporium, when I espied a used RS swr meter, the real cheap one they sell for CB's. For $9, I figured, it's at least good to strip the meter out of. So I take the thing home, and hook it up to my 2 meter HT and a precision 50 ohm coaxial termination. The thing says 1.1:1. Then I try a 100 ohm load - damn close to 2:1. It must be working! Next, I reverse the connections; not so good, around 1.7:1 with 50 ohms. Sensitivity: with my HT @ 146MHz and 1W output, I could peg the meter with the wiper on the CAL pot about 40% from the ground end. Not bad.

Taking the thing apart, I discover a PCB stripline with 2 pickup loops, and a pair of detector circuits. The reverse loop is terminated with a trimpot, but the forward loop ends in a fixed 100 ohm resistor. Time to re-engineer the thing. Here's how...

1) Add a 1K trimpot across the 100 ohm loop termination. 49 cents at RS. Just stick it on the foil side of the board. The actual loop impedence measures 86 ohms at null.
2) The forward detector circuit has a 270 ohm resistor between the diode and the FOR/REF switch, the reverse circuit does not. This is isolation for the "field strength meter" circuit. Add another resistor to make both sides the same - there are already pads on the board for this.
3) Cut out the two diodes for the "field strength meter" circuit. It doesn't work anyway, unless you clip-lead the thing to your antenna.
4) Check the forward drop of the two detector diodes - if they're too far apart, replace them with a matched pair of 1N34A's.
5) Null the loops with a *good* quality 50 ohm termination.

That's it. For less than 10 bucks I've got a pretty good 2 meter swr meter. Even if you buy one new for $19.95, it's probably cheaper than anything else you'll find. Make sure you get the cheapo model, with the worthless field strength meter circuit; I have no idea what's inside the higher priced one. Mine is model 21-525B; except for cosmetic changes, I suspect the newer ones are the same.

It would be interesting to see if this thing works up at 440MHz, but I don't have any 70cm gear now. Any takers?

Now I can get on with building antennas, which is what I wanted to do in the first place. I'll let you know how the vertically polarized loop yagi turns out...

Steve N8KWV

2077. TH-28A Hacks?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 01:15:08 UTC
From: paulg105@aol.com
Message-ID: <31pfes$jsh@search01.news.aol.com>
Source record: 116817

Does anyone know of any TH-28A hacks, you know like gettin' more frequencies?

Please email them to me.

Thanks,
Paul (The Freak) N3PMH

"Step right up! March! Push!"
-Nine Inch Nails

2078. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 01:46:44 UTC
From: drew@trl.oz.au
Message-ID: <drew.152.0@trl.oz.au>
Source record: 116868

In article <31nbc6$4u1@news.ysu.edu> aq760@yfn.ysu.edu (Ben Slagle) writes:
>From: aq760@yfn.ysu.edu (Ben Slagle)
>Subject: 6m amplifier using vacuum tubes
>Date: 3 Aug 1994 05:53:10 GMT
>
>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>like it to be in the area of 10 watts... nothing fancy, just a
>n amplifier I can make for cheap. Thanks.

At first glance this looked like a fairly simple question. I've looked through all my books going right back to the 60's (these include RSGB, ARRL and Bill Orr's H'books, and Jessop's RSGB VHF/UHF H'book). There's not a lot of 50 MHz material at about the 10W power level using tubes is there? (it's all 500 W to 1 kW stuff).

However, my copy of the ARRL VHF H'book for 1972 has a circuit using a 6146 tube as part of a transverter project (page 131). Requires +600 V and -100 V supplies. Looks like it may do the job, as it can be adjusted for linear or class C operation.

73, Drew, VK3XU. Telecom Australia Research Laboratories.

2079. Re: Switched Capacitor Filters ...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 02:00:50 UTC
From: drew@trl.oz.au
Message-ID: <drew.153.0@trl.oz.au>
Source record: 116870

In article <Ctynru.C49@rd1.racal.com> tavernin@sun1.interlan.com (Victor Tavernini) writes:
>From: tavernin@sun1.interlan.com (Victor Tavernini)
>Subject: Switched Capacitor Filters ...
>Date: Wed, 3 Aug 1994 13:21:28 GMT
>I'd appreciate any pointers to information on these wonderful devices ...
>
>Thanks,
>
>Victor Tavernini, KE4JMY/AA
>Racal-Datacom, Inc.
>
>tavernin@sun1.interlan.com

Victor, do you have access to back issues of Radio Communications magazine? (the excellent RSGB journal).

Look up Rad Comm Sept '84 where on pages 755-758, Steve Price, G4BWE describes a switched-capacitor filter using the CD4066 quad bilateral switch. I did not build this project, so cannot offer any recommendation, although I believe some of the earlier designs suffered from "aliasing" problems.

73, Drew, VK3XU Telecom Australia Research Laboratories.

2080. Re: want plans for"interface for cw with PC"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 03:26:35 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <31pn5b$m8k@chnews.intel.com>
Source record: 116813

In article <CtzI9D.Gn9@ucdavis.edu>, <szhall@chip.ucdavis.edu> wrote:
>I understand there are some very simple plans for making an interface so
>you can send CW with your PC--Do you know where I can get the plans or a
>kit? Thanks for your help..73es..Jeff
>
Hi Jeff, The SuperMorse manual tells you how to do it with SuperMorse. On most transceivers, all it takes is an NPN transistor and a resistor. But the optoisolator suggested by SuperMorse will keep you out of trouble.

With tongue firmly planted in cheek I say, please note that MCP's (Morse Code Purists) will disown you for generating CW with a machine 'cuz it wusn't dun thut way in thu 20's... glad I'm not thut old. :-)

Good luck and 73, Cecil, KG7BK, OOTC (Not speaking for Intel)

2081. Re: Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 08:56:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940804085605OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 116882

>Crystal oscillator design, in my experience, is self taught or learned
>from other engineers. Books aren't much help.

Have you seen:

"Design of Crystal and Other Harmonic Oscillators"
by Benjamin Parzen
John Wiley & Sons

"Crystal Oscillator Circuits"
by Robert J. Matthys
Copyright 1983 John Wiley & Sons

I haven't built all that many circuits, but these books look good
to me.

2082. Re: 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 11:49:29 UTC
From: zlau@arrl.org
Message-ID: <1994Aug4.114929.22559@arrl.org>
Source record: 116909

James D. Cronin (jdc@cci.com) wrote:

: And then there's projects using parts cheaply and easily available
: in the 90's. Well, I'm off to the local Radio Shack for some dual-
: gate MOSFET's.

Thanks for the info. I wasn't sure that these were acceptable for
use in a 20 meter SSB transceiver that I designed ages ago. I've
been too busy trying to operate all the VHF/UHF/microwave contests
on all bands/modes to keep track of the latest RS offerings/rumors of
offerings. Maybe I'll have time to design the LO for my 24 GHz
transverter before the September Microwave Update in Estes Park, CO.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2083. Need info on a RX-only ant tuner...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 14:08:02 UTC
From: ai351@leo.nmc.EDU
Message-ID: <9408041408.AA29021@leo.nmc.edu>
Source record: 116875

There was an article on a QRP antenna tuner in the June 1992 Popular Electronics that should work for you. You'll need a 335 pF tuning capacitor, a 12-position rotary switch, a SPDT center-off toggle, a T130-6 toroid (yellow core), and some #24 enamel-coated wire. Wind 21 turns of the wire onto the toroid, making loops for taps at turns 1,3,5,7,9,11,13,15,17,and 19. Solder turn 21 to the first contact (assuming clockwise rotation) on the switch, turn 19 to the second contact, etc., until turn 0 is connected to contact 12 on the switch. Connect turn 0 to one contact of the SPDT toggle, and connect the center of the rotary switch to the other contact. Connect the 335 pF capacitor to the center contact of the toggle, and connect the other end of the capacitor to circuit ground. Now connect the center pin of the transmitter connector to one contact of the toggle, and the antenna connector to the other. The switch lets you electrically reverse the tuner, and by putting the switch in its center position, the tuner is taken out of the circuit.
Here's a rough diagram (with the coil and rotary switch omitted):

```
to center^ ^to turn 0 (contact
of rotary| |12 of rotary switch)
switch | |
+--------------o o--------------+
| / |
| o |
| | |
| C1 (335 pF |
| | tuning cap) |
+-----+ +-------+-------+ +-----+
| | | |
(o)-+ +-(o)
XMTR ANT
```

--
-=-
ai351@leo.nmc.edu David Brodbeck
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-

2084. Re: Model rocket telemetry..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 15:08:49 UTC
From: anto@gate.net
Message-ID: <31r0a1$eq6@tequesta.gate.net>
Source record: 116869

David Brodbeck (ai351@leo.nmc.EDU) wrote:

: >A Varactor diode, sometimes called a varicap is a 'diode' who's capacitance
: >is varied by a DC bias voltage; often used to electronically tune radios.
: >Most of the major distribs. should carry them i.e. mouser, digi-key etc.

: --> You would think so, considering their widespread use in TV tuners, etc.,
: but I get Mouser, Digi-Key, and a few other catalogs and still have not
: had any luck fiding a varactor. (I also need one, for the same circuit in
: fact.) Marlin P. Jones & Associates (A surplus catalog) used to have a
: matched set of 3 for something like 10 cents, but they don't have them
: anymore. If anyone knows a source for these, I'd appreciate a reply.

DC Electronics in Scottsdale, AZ carries the Motorola MV21xx series.
Their number is (800)467-7736 or (800)423-0070. Get the catalog.. good
stuff for the radio experimenter.

Nigel

2085. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 15:57:11 UTC
From: kchen@apple.com
Message-ID: <31r34n$opl@apple.com>
Source record: 116887

jmiller@peds.eyes.arizona.edu (Joe Miller) writes:

> Once upon a time, there was a great "technical" ham radio mag called "Ham
> Radio". It was apparently too technical for the market, but had a great
> run and I still access back issues.

Those who enjoyed "Ham Radio" might also enjoy "Communications Quarterly."

Although published by the same folks who brings you the CQ Magazine, it
is nowhere like the CQ magazine, both in content and technical calibre.
CQ brought out CommQuarterly after buying out "Ham Radio."

I don't have a recent issue here at work, but have the Spring 1991 issue
handy. Its table of contents (total of 112 pages) will give you a taste
of the quarterly:

. The Quad Antenna: rectangular and square loops
. DSP: Image Processing
. Solid-state 75S-3 Receiver
. VLF-LF and the Loop Aerial
. A 4800-baud modem daughter-bord for packet TNC
. HF modems for data transmission
. Yagi Optimisation and Observations on Frequency
offset and Element taper problems
. What's the Electromagnetic Capability of your antenna?
. The Travelling-Wave amplifier
. A high performance 1296-MHz converter.

Every issue has more or less this flavour. Milage varies from
issue to isse, of course, but the editor deserves much praise for
putting out pretty well balanced issues.

The phone number they gave is: (516) 681-2922. Not inexpensive: $29.95
for one year (remember, only 4 issues) to U.S. subscribers; but as some
TV commercial goes, "you're worth it." I have seen it on newsstands too
(Printer's, Inc. in the S.F. Bay Area, for example).

Disclaimer: I have no connection with any of these magazines, except
that I subscribe to more of them than I should have :-) So, who else
is schizo enough to subscribe to both Comm Quarterly and the DX magazine?
:-) Anyone interested in finding out about the RTTY Digital Journal? :-)

Happy reading and building and 73,

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

2086. 3 coax relays for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 15:58:13 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <qRgJqc6w165w@opus-ovh.spk.wa.us>
Source record: 116894

I have three coax relays that I am no longer using. All are milled out
of solid metal and plated with relays bolted right to the block.
Two relays are 2-pole switches and the other is a 6-pole switch.
The 2-pole switches appear similar to what Surplus Sales
of Nebraska (402-346-4750) sells for $38+$4s/h. See the picture on
page 40 of the July issue of Nuts & Volts. Theirs are spec'd at 100w,
500MHz, 1 amp contacts, 18-32 vdc coil. The coil on my unit measures 280
ohms static DC resistance. All three relay assemblies I'm selling are in
excellent condition, fully functional. Some relays have diodes installed
across the coil.

1:6 coax relay innards:

A 3" x 2.5" block of metal with a central BNC sticking out of the middle.
On either side are vertical stacks of 3 BNC connectors. On the back are six
relay coils stamped with the text "26 VDC".

Removing an inspection plate shows a brass? copper? bar soldered
directly to the central BNC center pin and held in a milled out channel at the
extemes with teflon spacers. Each relay coil, when energized, lowers a
flexible metal strip onto the bar. The shield of all BNC connectors
are silver soldered directly to the block. All six contacts are normally
open, and close upon relay actuation.

1:2 coax relays:

The other two are identical milled bars (instead of blocks) with similar
central feed and BNCs on the left or right of a center BNC. Construction is
comparable, except on these, one output is normally open, the other is
normally closed.

I advertised the 1:2 relays on the net for $19+$3s/h. If you'd like one
or both relays at that price, pre-paid with a postal money order, let me know.
Any more than two takers and I'll pull e-mail addresses from a hat.
Anybody who offers to prepay more with a postal money order, will get first
dibs. I'll sell the 6-pole switch for $60+3s/h under the same ROE. All
that said, I'll barter.

Brian Mork UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
.... USMail 6006-B Eaker, Fairchild, WA 99011
.. .. .. .V:509-244-3764 D:509-244-9260

2087. Tube 6 m Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 16:43:42 UTC
From: mack@mails.imed.COM
Message-ID: <9407047760.AA776022222@mails.imed.com>
Source record: 116876

There was no e-mail address for the person posting this inquiry, so I'll post it here. You can find a good 6146 design in the older ARRL Handbooks circa 1977. These are the old style from before they were 8" by 11". I believe that the design was either in the VHF section or the portable/emergency section. This design should also work with a 2E26 if you only want about 10 Watts. You could also use a 2N6084 power transistor for an inexpensive amp (this is about $13 US for the transistor). There is a schematic for a 2m version class C on page 31-34 of 1985 ARRL Handbook using this transistor. You could scale the inductors and capacitors for use on 6m and add a bias circuit for class AB operation. This transistor can give about 40W of output with about 10db gain at 50MHz. Send me your e-mail address and I should be able to send a postscript file with a schematic in a week or so.

Ray
WD5IFS
mack@mails.imed.com

2088. Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 17:10:52 UTC
From: yee@mipg.upenn.edu
Message-ID: <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>
Source record: 116880

I am working on a power/swr meter project and am in need of some ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I am unable to find a vendor for these. Newark, Active and Digikey don't seem to carry it (at least by Amidon) and I don't know the part numbers for other manufacturers.

--
Medical Image Processing Group | 73 de Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

2089. Re: Multiplexed microwave links

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 18:36:39 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Aug4.183639.887@ttinews.tti.com>
Source record: 116883

In article <31omo9$ju2@kira.cc.uakron.edu> kevin@marconi.w8upd.uakron.edu (Kevin C. Swanson) writes:
>Has anyone seen any cheap multiplex microwave link products. Our club is
>trying to phase out the UHF links for our 2m repeater and we would rather
>buy something with 3-6 audio channels at 900 or above. We have looked into
>Mot. Starpoint 2000's, but they are too pricey, any suggestions??
>
>Kevin
>

Why not look into a pair of Advanced Receiver Research's 10GHz gunnplexer based transceivers? Their complete one-channel FM voice or cw units are priced at something near $500, and if you wanted to do some board-level hacking yourself, you could build the modulator/demod-receiver and i.f. stages yourself - the basic gunnplexer with horn is about $190 each...
..they also have units at 24 GHz and higher power (>10mW) units available.

I'd like to find an existing ATV interface for the gunnplexer myself...

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

2090. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 19:06:52 UTC
From: jbloom@arrl.org
Message-ID: <1994Aug4.190652.6206@arrl.org>
Source record: 116871

Robert Everitt Heiss (rheiss@harp.aix.calpoly.edu) wrote:
: So there were recent articles by Dr. Rhode in both QST and QEX on the
: same subjects? I wonder what QST readers missed.

Mostly, a great deal of mathematical detail.
--
Jon Bloom KE3Z jbloom@arrl.org

2091. Re: Source for transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 20:35:25 UTC
From: papo@briscas.ctt.bellcore.com
Message-ID: <31rjed$q2p@athos.cc.bellcore.com>
Source record: 116872

Greetings!

Is there such kit over over netland? Where I can get a decent solid state ,
transistor based QRP kit ? Any experience wich such things?
Does someone knows what I'm talking about? (I'm sure I'm not. :))

Regards,

--
Luis Roberto Anaya-Rivera papo@donuts0.bellcore.com
A True PL/1 Hacker papo@briscas.gamekeeper.bellcore.com
Bellcore, NJ Ham: N2ZXE

--
Luis Roberto Anaya-Rivera papo@donuts0.bellcore.com
A True PL/1 Hacker papo@briscas.gamekeeper.bellcore.com
Bellcore, NJ Ham: N2ZXE

2092. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 21:04:06 UTC
From: Droege@fnal.fnal.gov
Message-ID: <31rl46$qmr@fnnews.fnal.gov>
Source record: 116879

In article <445@ted.win.net>, mjsilva@ted.win.net (Michael Silva) says:
>
>Can someone explain the differences I should expect to find between
>"identical" transistors in plastic and metal? My specific case
>involves some PN5179s I have. Is there any case where these might not
>work in a circuit designed for a 2N5179? Aside from having less heat
>dissipating ability, are the plastics in any way inferior?
>
>Thanks for any info.
>
>Mike, KK6GM
>
>
Often the plastic package has less capacitance and so might be better at high frequency. The metal can is usually thought to be better environmentally, but since passivation it does not make much difference.

Tom Droege

2093. Re: Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 21:27:14 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31rmfi$dfq@hpscit.sc.hp.com>
Source record: 116873

In article <CtzDJ5.E7o@hpcvsnz.cv.hp.com>, Tom Bruhns <tomb@lsid.hp.com> wrote:
>Richard Karlquist (rkarlqu@scd.hp.com) wrote:
>: In article <31ob13$e3e@mrnews.mro.dec.com>,
>: Tom Randolph <randolph@est.enet.dec.com> wrote:
>
>: >I haven't been able to find much discussion of this in print...
>
>: Crystal oscillator design, in my experience, is self taught or learned
>: from other engineers. Books aren't much help.
>
>There have been some pretty good articles in RF Design magazine over
>the past 5 or so years on crystal oscillators. Most seem to be
>written "by engineers for engineers", so they fall into the
>second recommendation from Rick.
>
>73, K7ITM

Actually, I am not all that impressed with the general quality
of articles in RF Design magazine. If you've found them
helpful, that's great, but I don't think they're going to
result in large numbers of people becoming proficient in
oscillator design merely by reading them.

As always, your milage may vary.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

2094. Re: Xtal application (series/parallel)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 21:29:51 UTC
From: rkarlqu@scd.hp.com
Message-ID: <31rmkf$dmc@hpscit.sc.hp.com>
Source record: 116874

In article <199408040856050SYSMAS@mvs.oac.ucla.edu>,
Michael Stein <OSYSMAS@MVS.OAC.UCLA.EDU> wrote:
>>Crystal oscillator design, in my experience, is self taught or learned
>>from other engineers. Books aren't much help.
>
>Have you seen:
>
> "Design of Crystal and Other Harmonic Oscillators"
> by Benjamin Parzen
> John Wiley & Sons

Parzen, of "OSCI" and "LLATOR" fame? Give me a break!

Rick
rkarlqu@scd.hp.com

2095. Re: 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 22:26:48 UTC
From: btoback@netcom.com
Message-ID: <btobackCu17oo.LsE@netcom.com>
Source record: 116878

In article <CtyxrA.2LL@sunsrvr6.cci.com> jdc@cci.com (James D. Cronin) writes:
>>--
>
>Try the ARRL Handbook. My 1974 copy has a 25 and 45 watt amp for
>2-meters.
>
>Strangely enough, older editions have more useful information.
>The new ones cover things that apply to every-ham, like 45 foot
>dish antennas mounted on navy surplus gun mounts. Or really
>useful things that can't be found anywhere else, like ASCII/Baudot
>tables and other newfangled computer stuff.

In defence of the current Handbook, the editors have a lot more to cover today than they did in 1972 -- or 1965, the earliest Handbook I have. In 1972, nobody was doing data communication, spread-spectrum, computerized logging, digital controls, DDS, AMTOR, etc. Almost nobody was doing EME or satellite communication, weather satellite reception, microwave communication... how many entrants would there have been in a 10 GHz contest in 1972?

The ARRL could have dealt with this in either of two ways. One way is to make the Handbook a lot bigger, so it could go into the same depth on all these subjects as it did HF and VHF in 1972. You know, schematics and such for computers (two or three different processors), modems (two or three different kinds, plus a DSP one with some software), a treatise on programming, a couple of spread-spectrum rigs (one FH and one DS) and maybe a wideband amplifier for SS use, an AMTOR controller, a packet TNC, a couple of microwave amplifiers and exciters, with maybe three for the lower microwave bands plus one for the 47GHz and one for the 120GHz band, a repeater controller (two would be nice: one computer-controlled and one hard-wired), plus all the HF and VHF projects suitably updated to today's techniques. In addition to all the construction projects, they should have sections dealing with satellite tracking, including a couple of computer programs (one for a PC, one for a handheld), a mathematical analysis of spread-spectrum techniques, a full description of pacsat and weather satellite capabilities and communication protocols, information on designing and analyzing microstrip and waveguide circuits, information on adapting TWTs, magnetrons and klystrons to amateur frequencies (with one or two construction projects for illustration), a section on preparation of information for repeater frequency coordination, and so on. The deluxe edition could come with wheels and a little pull-up handle, like a Samsonite.

The other alternative, the one they chose, is to provide at least a few pages on almost everything that any ham could possibly need to know, and

then go into detail on the basics: electrical theory, circuit design, antenna principles (though some say they should do a better job on electromagnetics), operating practices, and construction techniques. If you want more about any of the "esoteric" subjects, there's the Satellite Experimenter's Handbook, the RTTY/AMTOR Companion, the Spread Spectrum Sourcebook, the Microwave Experimenter's Handbook, and so on. ARRL still provides the information and the projects; they just put it in multiple volumes. I think this is a much better idea than a Handbook that weighs 10kg and costs $125.

>And then there's projects using parts cheaply and easily available
>in the 90's. Well, I'm off to the local Radio Shack for some dual-
>gate MOSFET's.

Well, they don't have any dual-gate MOSFETs, but they have a single-gate MOSFET. Maybe you could put two in series. :-)

-- Bruce KN6MN

2096. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 22:54:42 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Aug4.225442.5435@ttinews.tti.com>
Source record: 116877

In article <31pa2b$bis@apple.com> kchen@apple.com (Kok Chen) writes:
>bmork@opus-ovh.spk.wa.us (Brian) writes:
>
>>yee@mipg.upenn.edu (Conway Yee) writes:
>
>>> If QEX is truly only 24 pgs, there is barely an excuse NOT to have it
>>> in QST. A typical QST is circa 240 pgs long. What is an extra 24
>>> pgs?
>
>>A quibble: It's nominally 32 pages long.
>
>
>A quibble-quibble: about 4 of the internal pages are advertisments which
>seem to already be in QST. :-)
>
>However, I really prefer that the ARRL keeps QEX a separate publication.
>As a special interest publication, its editorial board can cater to the
>needs of the technical readers rather than succumb to more general pressure.
>The recent "How technical is 'too technical'" question posed by Jon Bloom
>and what he did in response to the survey is a good example of that.
>
>73
>
>Kok Chen, AA6TY kchen@apple.com
>Apple Computer, Inc.

Its too damn bad the ARRL wont do the same with all that bloody
"contest-babble" they include with every freakin issue! like who
cares who made BPL for the 122nd straight month in a row? Uuurrp!
...just goes to prove the average IQ really *is* just 100!

I like QEX except for the articles that use those blasted UK and
EURO-spec (read: you cant find 'em and nobody knows which standard
US parts can be substituted for them) semiconductor devices...sheesh!

73!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

2097. Re: What is this HP Thinkjet IC ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 23:24:43 UTC
From: jab@narcesc.atl.hp.com
Message-ID: <31rtbr$2ug@hpuerci.atl.hp.com>
Source record: 116885

In <CtJwwI.Muv@rivm.nl> charlos@rivm.nl (Charlos Potma) writes:

>The stepper motor (used in the printer for paper-feed)
>is apparently controlled by an IC marked: 1858-0097-8610 .

>My question is: what is this IC ?. Is it a HP part number ?.

This is indeed a HP "house marked" IC. Somewhere there is a database
that will cross reference an 18xx number to the industry number.

I also remember (before I became a unix hack) there was a "parts ID"
phone number that could help in cases.

I will see if I can get any info on this. (May be a long shot, though)

Alan Barrow km4ba | If a little knowledge.....
Work: jab@atl.hp.com | is a dangerous thing.....
Home: alan@km4ba.ampr.org | then what is the Anti-Dote???

2098. Re: Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-04 23:32:54 UTC
From: match@ee.elen.utah.edu
Message-ID: <match.6.2E417AA6@ee.elen.utah.edu>
Source record: 116881

In article <YEE.94Aug4131058@mipgsun.mipg.upenn.edu> yee@mipg.upenn.edu (Conway Yee) writes:
>From: yee@mipg.upenn.edu (Conway Yee)
>Subject: Ferrite cores and beads
>Date: 04 Aug 1994 17:10:52 GMT

>I am working on a power/swr meter project and am in need of some
>ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
>am unable to find a vendor for these. Newark, Active and Digikey
>don't seem to carry it (at least by Amidon) and I don't know the part
>numbers for other manufacturers.

>--
>Medical Image Processing Group | 73 de Conway Yee, N2JWQ
>411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
>423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
>Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

Buy these directly from Amidon. They'll sell to hams in small quantities.

I don't have their address or phone number handy, but they advertise in the ham magazines.

Polomar Engineers also carries them, or equivalants. They advertise in the ham magazines also.

Marv
KA7TPH

2099. Re: Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 00:13:12 UTC
From: sct@po.cwru.edu
Message-ID: <31s06p$fdr@usenet.INS.CWRU.Edu>
Source record: 116886

In article <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>,
Conway Yee <yee@mipg.upenn.edu> wrote:
> I am working on a power/swr meter project and am in need of some
> ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3).

Amidon does mail order and has no problem with small orders. Their
phone number is 310-763-5770 and FAX is 310-763-2250. The T50-3 is
$0.65 each and FB73-101s are $2.00 a dozen. Shipping and handling
is $4.00 for less than 2 pounds. There is no minimum order.

The T50-3 is an iron powder core. Amidon ferrites all start with "F".

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the CYWS
European performance tour 1994

2100. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 00:37:00 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <31s1jc$d9v@hobbes.cc.uga.edu>
Source record: 116889

Erik Sorgatz (sorgatz@avatar.tti.com) wrote:

: I like QEX except for the articles that use those blasted UK and
: EURO-spec (read: you cant find 'em and nobody knows which standard
: US parts can be substituted for them) semiconductor devices...sheesh!

Hmmm, they should translate the parts numbers too, when they translate
a German or French article :)

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
For information about any U.Ga. graduate program, email gradadm@uga.cc.uga.edu.

2101. Re: Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 02:02:53 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <Cu1Hou.BDr@freenet.buffalo.edu>
Source record: 116884

In a previous article, yee@mipg.upenn.edu (Conway Yee) says:

>I am working on a power/swr meter project and am in need of some
>ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
>am unable to find a vendor for these. Newark, Active and Digikey
>don't seem to carry it (at least by Amidon) and I don't know the part

Amidon sells direct, but they are most expensive. Try Oak Hills,
Dan's Small Parts, Ocean State. They all use corresponding Amidon
part numbers. If you need addresses or phone numbers, email me and
I'll digum up.
--

2102. RCI 2950 AND ITS CW NOTE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 08:45:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.980.2645@aquila.com>
Source record: 116898

Hello All. Does anyone know if there is a problem with the Note on CW
with the RCI 2950? A friend across town have one and the the Note is
Horrible! Thanks ahead of time for any Info related to this unit.
* RM 1.3 00559 *

2103. Re: Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 10:23:57 UTC
From: randolph@est.enet.dec.com
Message-ID: <31thtp$sdr@mrnews.mro.dec.com>
Source record: 116888

In article <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>, yee@mipg.upenn.edu (Conway Yee) writes...
>I am working on a power/swr meter project and am in need of some
>ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
>am unable to find a vendor for these. Newark, Active and Digikey
>don't seem to carry it (at least by Amidon) and I don't know the part
>numbers for other manufacturers.

Amidon Assoc., Inc.
12033 Otsego St.
N. Hollywood CA, 91607

Ask for a catalog.
-Tom R. N1OOQ randolph@est.enet.dec.com

2104. Handbook was(Re: 2m mobil amplifier)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 13:41:40 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug5.134140.16571@ke4zv.atl.ga.us>
Source record: 116891

In article <btobackCu17oo.LsE@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>The other alternative, the one they chose, is to provide at least a few
>pages on almost everything that any ham could possibly need to know, and
>then go into detail on the basics: electrical theory, circuit design,
>antenna principles (though some say they should do a better job on
^^
>electromagnetics), operating practices, and construction techniques.
^^^^^^^^^^^^^^^^^

Amen to that! Even the ARRL Antenna Book consumes chapters on transmission
line theory and propagation while glossing over why and how antennas work
in a paragraph. Instead it offers cookbook *how-tos* on building classic
antennas with no mention of why they work the way they do. No theoretical
underpinning is offered that could allow an amateur to confidently design
an antenna with a particular set of characteristics. Radiation *is* what
radio is about. One would expect more than a cursory handwave on this
important topic in amateur handbooks, and particularly in an *antenna* book.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2105. Tube Receiver IF oscillates, Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 13:54:03 UTC
From: ed@fore.com
Message-ID: <Cu2EM4.Ku5@fore.com>
Source record: 116900

Ok older tube hackers, this one is for you.

I have a tempo one, Tube hf rig, I have been using the receiver for
over a month, I borrowed a portable tube tester and removed the tubes
1 at a time. Tested them and put them back in their respective sockets.
All the tubes tested either good or the hi end of the \?/ range.

When I powered tempo up, I got a full scale S meter reading and no received
audio at all, Could not even receive the xtal calibrator.

I started pulling tubes out and finally removed (I think) the 1st IF tube,
a 12AX7A, the S meter went down. I swapped it with another 12AX7A (tx circuit)
and I was able to receive the xtal cal osc, but on AM I was getting a tone that
would zero beat and then increase in freq when I qsy +/- the calibrate signal.

Is there a possibility that the tube checker (an EICO briefcase style) could
have damaged the tubes? They all checked good, or near good, and no shorts.
I am wondering if I may have cracked a tube socket solder connection pulling
& inserting the tubes.

I did not have time & energy to get into it deep at midnight last night (YAWN).

Ideas? Things to check? Similar Experiences?

Ed N3SDO Ed@fore.com

2106. New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 14:36:03 UTC
From: greg@netcom.com
Message-ID: <gregCu2GK4.JGv@netcom.com>
Source record: 116902
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

It's a shame to retire my Drake UV-3 to packet service, now that virtually every local repeater requires PL tones.

So I've been thinking about setting up an outboard sub-audible and DTMF encoder. Now the encoder and the DTMF pad are easy to obtain. However, most of the encoders seem to want a 5-bit encoding of values from 0-31 to select the sub-audible tones.

The control circuits seem like a significant challenge. Does anyone know of a construction article or a kit for a sub-audible encoder with a human interface which is better than a row of dip switches?

Greg

2107. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 14:52:50 UTC
From: match@ee.elen.utah.edu
Message-ID: <match.7.2E425242@ee.elen.utah.edu>
Source record: 116890

In article <199408021925590SYSMAS@MVS.OAC.UCLA.EDU> OSYSMAS@MVS.OAC.UCLA.EDU (Michael Stein) writes:
>From: OSYSMAS@MVS.OAC.UCLA.EDU (Michael Stein)
>Subject: Re: Plastic vs. Metal Transistors
>Date: Tue, 02 Aug 1994 19:25

>>Moulded plastic or metal can? As with most things in life, it
>>depends...

>I seem to remember reading (Pease?) that some metal cases admit
>light (around the leads). The TI transistor databook seems to
>say that the plastic case is opaque (for each transister def...).

I've never heard it mentioned that the metal cans admit light around the leads, but I've definitely seen plastic package transistors that are not even close to opaque! It just depends on the fillers in the epoxy. Some can be used as photo-transistors! Start smashing plastic transistors of random types from different vendors, hold the shards up to the light and sooner or later you'll find some that are not opaque black, but actually translucent brown.

Marv KA7TPH

2108. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 15:17:08 UTC
From: kchen@apple.com
Message-ID: <31tl5k$10l@apple.com>
Source record: 116897

royle@tekgp4.cse.tek.com (Roy W Lewallen) writes:

>(It's easy to see why transistors have a maximum temperature rating. But
>didn't you ever wonder why there's a minimum, too? Why, it's because if
>they get too cold, they freeze their cans . . .)

When the temperature gets cold *enough* :-), take a look at the kT
terms in the diffusion equations.

But then, I can't imagine a 6L6GT working at -273 C, either :-).

73,

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

2109. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 15:35:14 UTC
From: btoback@netcom.com
Message-ID: <btobackCu2JAq.7s7@netcom.com>
Source record: 116904
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <gregCu2GK4.JGv@netcom.com> greg@netcom.com (Greg Bullough) writes:
>
>It's a shame to retire my Drake UV-3 to packet service, now that virtually
>every local repeater requires PL tones.
>
>So I've been thinking about setting up an outboard sub-audible and DTMF
>encoder. Now the encoder and the DTMF pad are easy to obtain. However,
>most of the encoders seem to want a 5-bit encoding of values from 0-31
>to select the sub-audible tones.

Communication Specialists has an encoder that can be programmed with
a 31-position switch. You could also use a pair of hexadecimal thumbwheel
switches with a little translation table, or an EPROM with a switch that
contains just the PL frequencies you need. How much room do you have
for the controls? Is there enough room for hex switches, a rotary switch,
or whatever?

-- Bruce KN6MN

2110. Re: Plastic vs. Metal Transistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 15:56:47 UTC
From: tomb@lsid.hp.com
Message-ID: <Cu2KAo.Hww@hpcvsnz.cv.hp.com>
Source record: 116892

Marvin Match (match@ee.elen.utah.edu) wrote:
: In article <199408021925590SYSMAS@MVS.OAC.UCLA.EDU> OSYSMAS@MVS.OAC.UCLA.EDU (Michael Stein) writes:

: >I seem to remember reading (Pease?) that some metal cases admit
: >light (around the leads). The TI transistor databook seems to
: >say that the plastic case is opaque (for each transister def...).

: I've never heard it mentioned that the metal cans admit light around the
: leads, but I've definitely seen plastic package transistors that are not even
: close to opaque!

Metal-cased transistors indeed can leak light. I noticed this a long
time ago (22 years?) with a Siliconix dual JFET I tried to use as an input
follower in front of an op amp; in the dark, the input bias currents at
room temp could be in the picoamp range or below, but with some light,
things fell apart. It was a lesson not forgotten!

73, K7ITM

2111. Re: Tube Receiver IF oscillates, Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 16:34:51 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.776104491@melpar>
Source record: 116893

ed@fore.com (Ed Bathgate) writes:

>Ok older tube hackers, this one is for you.

>I have a tempo one, Tube hf rig, I have been using the receiver for
>over a month, I borrowed a portable tube tester and removed the tubes
>1 at a time. Tested them and put them back in their respective sockets.
>All the tubes tested either good or the hi end of the \?/ range.

>When I powered tempo up, I got a full scale S meter reading and no received
>audio at all, Could not even receive the xtal calibrator.

>I started pulling tubes out and finally removed (I think) the 1st IF tube,
>a 12AX7A, the S meter went down. I swapped it with another 12AX7A (tx circuit)
>and I was able to receive the xtal cal osc, but on AM I was getting a tone that
>would zero beat and then increase in freq when I qsy +/- the calibrate signal.

>Is there a possibility that the tube checker (an EICO briefcase style) could
>have damaged the tubes? They all checked good, or near good, and no shorts.
>I am wondering if I may have cracked a tube socket solder connection pulling
>& inserting the tubes.

Since all you did was pull the tubes and replace them, I would immediately
suspect a cracked/cold solder joint on one of the socket pins, probably
a cathode or (if there are anything but dual triodes) screen bypass capacitor
coming unconnected which allows the tube to self-oscillate. There could be
other reasons owing to the same cause (bad connection), such as a disconnect-
ed wire or some such, but I'd definitely check the sockets carefully. Use
a magnifying glass if you have to, and if a pin connection looks doubtful,
give it a touch with your iron (or gun, if you still use one on tube stuff
like I do).

If the connections are all good, try cleaning the tube pins & sockets
by spraying cleaner on the pins and the socket and inserting & removing
the tubes a couple of times to clean the surfaces.

Paul, K4MSG

* Paul H. Bock, Jr. * Principal Systems Engineer
(|_|) * E-Systems/Melpar Div. * Telephone: (703) 560-5000 x2062
| |) * 7700 Arlington Blvd. * Internet: pbock@melpar.esys.com
* Falls Church, VA 22046 * Mailstop: N203

"Never ascribe to a sinister motive
that which is more likely due to stupidity."

2112. Tubes for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 18:20:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <5AUG199413200443@vax2.concordia.ca>
Source record: 116895

```
I have access to a large supply of tubes of all types.
E-mail the ID's for your needs and I'll email availability
and prices. There are literally thousands...too many to list.

--Jack
Email: HIRSCHJ@vax2.concordia.ca
```

2113. Re: Ferrite cores and beads

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 18:28:34 UTC
From: raider@mako.mugu.navy.mil
Message-ID: <Cu2rp9.DnL@avalon.chinalake.navy.mil>
Source record: 116901

In article <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>, <yee@mipg.upenn.edu>
writes:
> Path:
avalon.chinalake.navy.mil!newshub.nosc.mil!ihnp4.ucsd.edu!newshub.sdsu.edu!nic-
nac.CSU.net!charnel.ecst.csuchico.edu!yeshua.marcam.com!zip.eecs.umich.edu!news
xfer.itd.umich.edu!isclient.merit.edu!msuinfo!netnews.upenn.edu!netnews.upenn.e
du!yee
> From: yee@mipg.upenn.edu (Conway Yee)
> Newsgroups: rec.radio.amateur.homebrew
> Subject: Ferrite cores and beads
> Followup-To: rec.radio.amateur.homebrew
> Date: 04 Aug 1994 17:10:52 GMT
> Organization: Medical Image Processing Group, U of Penn
> Lines: 12
> Message-ID: <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>
> NNTP-Posting-Host: mipgsun.mipg.upenn.edu
>
> I am working on a power/swr meter project and am in need of some
> ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
> am unable to find a vendor for these. Newark, Active and Digikey
> don't seem to carry it (at least by Amidon) and I don't know the part
> numbers for other manufacturers.
>
>
> --
> Medical Image Processing Group | 73 de Conway Yee, N2JWQ
> 411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
> 423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
> Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

I would try:
FerriShield, Inc (212) 268-4020 POC: Jeri Olsen
Palomar Engineers (619) 747-3343

Good Luck.

~~~~~~
Name: Michael Raider
E-mail: raider@mako.mugu.navy.mil
Date: 08/05/94
Time: 11:32:14

The above opinions are entirely my own, and they do not represent
the official position of Naval Air Warfare Center or the DON.

~~~~~~

2114. Re: Multiplexed microwave links

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 19:24:12 UTC
From: jeff@ee.ryerson.ca
Message-ID: <31u3ks$17q2@hermes.acs.ryerson.ca>
Source record: 116896

Erik Sorgatz (sorgatz@avatar.tti.com) wrote:
: In article <31omo9$ju2@kira.cc.uakron.edu> kevin@marconi.w8upd.uakron.edu (Kevin C. Swanson) writes:
: >Has anyone seen any cheap multiplex microwave link products. Our club is
: >trying to phase out the UHF links for our 2m repeater and we would rather
: >buy something with 3-6 audio channels at 900 or above. We have looked into
: >Mot. Starpoint 2000's, but they are too pricey, any suggestions??
: >
: >Kevin
: >

: Why not look into a pair of Advanced Receiver Research's 10GHz gunnplexer
: based transceivers? Their complete one-channel FM voice or cw units are
: priced at something near $500, and if you wanted to do some board-level
: hacking yourself, you could build the modulator/demod-receiver and i.f.
: stages yourself - the basic gunnplexer with horn is about $190 each...
NO WAY..... MACom will sell you a pir of 10GHz trancievers for $70. not 170, not 700, $70. No kidding!

: ..they also have units at 24 GHz and higher power (>10mW) units available.

: I'd like to find an existing ATV interface for the gunnplexer myself...

: -Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
: TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
: 3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
: (OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

73! de Jeff / VE3DJF

2115. Re: 2m mobil amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 23:06:01 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Aug5.230601.23378@ttinews.tti.com>
Source record: 116899

In article <btobackCu17oo.LsE@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>
>In defence of the current Handbook, the editors have a lot more to cover
>today than they did in 1972 -- or 1965, the earliest Handbook I have.
>In 1972, nobody was doing data communication, spread-spectrum,
>computerized logging, digital controls, DDS, AMTOR, etc. Almost nobody
>was doing EME or satellite communication, weather satellite reception,
>microwave communication... how many entrants would there have been in
>a 10 GHz contest in 1972?
>
>The other alternative, the one they chose, is to provide at least a few
>pages on almost everything that any ham could possibly need to know, and
>then go into detail on the basics: electrical theory, circuit design,
>antenna principles (though some say they should do a better job on
>electromagnetics), operating practices, and construction techniques. If
>you want more about any of the "esoteric" subjects, there's the
>Satellite Experimenter's Handbook, the RTTY/AMTOR Companion, the
>Spread Spectrum Sourcebook, the Microwave Experimenter's Handbook, and
>so on. ARRL still provides the information and the projects; they just
>put it in multiple volumes. I think this is a much better idea than
>a Handbook that weighs 10kg and costs $125.
>
>
My complaint about the Handbook is that the ARRL is living in a bad
time-warp regarding the actual Amateur practices that are common and
fairly universal. An exellent example of this is the 1976 issue, look
in the section for mobile/portable stuff, it seems somebody was smoking
funny stuff because there, clear as a bell is an article on how to build
a 2m AM portable transceiver! Really useful! Even in 1976 FM was king in
the 2m universe! FM ht's were all the rage! Not mention one of it...why?

Same issue with the section on FM Communications, the author exgets in
mighty fashion about the Amateur use of re-crystaled commercial gear with
fixed tuning by crystal "required for precise frequency netting on FM.."
..Oh please! In 1976 there were lots of amateurs running both homebrew
and commercially made amateur rigs that had variable tuning for FM 2m
operation...where the hell was the author of that section? Stoned-again?
Or just living in a Newington-Haze?

The truth is, if you look at a range of Handbooks, you will find that some
of our illustrious wisdom is passed from one issue to another, with very
little updating. This a bad publishing practice! Those sections should be
dealing with the current state of the art practice and methodology - not some
reprinted junk about building with nixie-tubes or thumbwheel switches!

I agree that the Handbook should have a general smattering of information regarding the various bands, modes, operating practices, general circuits and theory, plus some history. Then put the more "exotic" stuff in a series of COMPANION VOLUMES! And keep those up to date..I've noticed that they have FINALLY updated the Mobile & Portable book and the FM Guide...still, it sure took long enough! My ploy is to preview these things at a local (Henry Radio) and if not much has changed in them - I simply refuse to buy them!

Are you listening ARRL??

And while we're at it, when-Oh-when are they gonna include some amplifier circuits for 6m/220/450 & 1.2 that use MODERN TRANSISTORS?? (A water-cooled tube amp for 1.2GHz is an accomplishment alright, but not too useful if you're planning to run mobile!

73! (listen to 28.310 usb at 20:10 UTC everyday for the last/first words on 10m it's the "Ten Again - Late Nite/Early Morning Rag Chew Net" KA6PVR (Paul) is Net Control - Bring an attitude and your legal callsign. Jammers and bootlegger's auditioned Friday Nites...get on the list! THUNDER OUT OF THE WEST!)

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

2116. Re: How do you make an (old fashioned, real) radio?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-05 23:44:06 UTC
From: pauls1234@aol.com
Message-ID: <31uis6$je7@search01.news.aol.com>
Source record: 116906

In article <312ter$f81@euas20.eua.ericsson.se>, joe@erix.ericsson.se (Joe Armstrong) writes:

Joe,

A really good book on crystal sets is "Radios That Work For Free" which is available from Lindsay Publications, P.O. Box 538, Bradley, IL 60915 ; (815) 935-5353. The book is catalog # 314 and will set you back $9.95! I've got a copy and recommend it.

Regards,

Paul Sexauer - W9JTO PaulS1234@AOL.com

2117. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 02:16:29 UTC
From: cwm3@psu.edu
Message-ID: <cwm3.50.2E42F27C@psu.edu>
Source record: 116903
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <gregCu2GK4.JGv@netcom.com> greg@netcom.com (Greg Bullough) writes:
>From: greg@netcom.com (Greg Bullough)
>Subject: New Life For Old FM Rigs
>Date: Fri, 5 Aug 1994 14:36:03 GMT

>It's a shame to retire my Drake UV-3 to packet service, now that virtually
>every local repeater requires PL tones.

>So I've been thinking about setting up an outboard sub-audible and DTMF
>encoder. Now the encoder and the DTMF pad are easy to obtain. However,
>most of the encoders seem to want a 5-bit encoding of values from 0-31
>to select the sub-audible tones.

>The control circuits seem like a significant challenge. Does anyone
>know of a construction article or a kit for a sub-audible encoder
>with a human interface which is better than a row of dip switches?

>Greg

Hi Greg.

It would be a very simple matter to program a ROM to output the correct 5 bit code when addressed by a pair of thumbwheel switches. You would simply dial up a number between 1 and 31 inclusive and the ROM would convert that number to the correct 5 bit code.

Chuck - K3CM

2118. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 02:43:15 UTC
From: sct@po.cwru.edu
Message-ID: <31utc3$jjs@usenet.INS.CWRU.Edu>
Source record: 116908
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

There are lots of ways to generate 5 bits of data. It depends on what degree of flexibility you need.

You could use a pair of hex or octal switches. Hex switches are available from most surplus dealers and octal switches turn up once in a while.

If you expect to need 12 or fewer tones, use a diode matrix and a rotary switch to get the codes you need. To do this, put a pull-up resistor on all five inputs. Ground the wiper of the rotary switch. For a given position of the switch, decide which bits you will need as zeros. Connect diodes from those bits to that position, so that the diodes pull those bits to 0.7V. Label the rotary switch with the resulting PL frequencies and you're all set.

You could combine the DIP switch and rotary switch approaches for up to 11 diode-programmed tones and one DIP-switch-programmed tone.

Finally, if you can get access to an EPROM or PLD burner, you can burn a chip to do whatever kind of encoding you want.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the CYWS
European performance tour 1994

2119. HF preamp circuit NEEDED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 05:38:31 UTC
From: x90galbrait1@wmich.edu
Message-ID: <1994Aug6.013831.20273@wmichgw>
Source record: 116907

I'm looking for an HF preamp circuit. Does anyone know of an available kit
or circuit board for such a device. The smaller the better.
Thanks in advance,
Chris KA8WFC

2120. E mail address for M. Lee Murrah WD5CID

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 17:15:52 UTC
From: Stephen@stevef.demon.co.uk
Message-ID: <776193352snz@stevef.demon.co.uk>
Source record: 116913

Does anyone have an E Mail address for Lee Murrah
WD5CID. I have some comments on his SuperMorse tutor.

The information I have is over 5 years old and gives a
Compuserv ID of 71016,1355 which I have tried to mail to but
seems not to exist anymore.

Also a current postal address would be nice so I can mail him his shareware fee.

Thanks in advance.
--
Steve Farthing | stephen@stevef.demon.co.uk |
Melksham "I'm pink therefore I'm Spam"
Wiltshire UK

2121. Re: Does anyone have info on QEX?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 20:24:36 UTC
From: kchen@apple.com
Message-ID: <320ri4$5mj@apple.com>
Source record: 116905

rheiss@harp.aix.calpoly.edu (Robert Everitt Heiss) writes:

>So there were recent articles by Dr. Rhode in both QST and QEX on the
>same subjects? I wonder what QST readers missed.

QST-only readers missed a lot of the meat in this, and many
other cases.

Remember the QST article (maybe a year ago) on a home-brew
receiver with the *really* robust front-end? Could withstand
something like a couple of volts of RF on the input before
overloading badly?

Well, the same author wrote a pretty detailed description of
a similar, if not the same receiver (schematics and all) in
the first (November 1991?) issue of Communications Quarterly!

73,

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

2122. NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-06 23:38:59 UTC
From: jcheah@hns.com
Message-ID: <1994Aug6.233859.15158@hns.com>
Source record: 116910

Dear Sirs,

I heard that that there is a wealth of knowledge on NEC simulation software here in the HAM world. Can someone point me to a ftp site where I can download Fortran source code for NEC, and any other things I can do to get up to speed on NEC....

Thank you,

jcheah@hns.com

2123. How does one make a good, CHEAP, antenna for 2m/70cm???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-07 06:16:07 UTC
From: justin@sequent.com
Message-ID: <1994Aug7.061607.15387@sequent.com>
Source record: 116911
Cross-posted to: rec.radio.antenna,rec.radio.amateur.homebrew

Hi there, I am not too sure if you guys get a lot of questions like this, but here's a shot.

I am looking to make my own CHEAP, high gain/low loss 2m/70cm antenna. II'm planning on operating a 5W handheld (all my budget can afford...) and got a lot of coax cable (not sure what it is but I think it is 8240 if that is correct??) I am only going to need about 5-10 feet from the inside of the house to the outside. I was planning on putting up a dipole along the side of the house that is always away from the sun. I don't care how long the antenna ends up being, I just want the BEST possible range...ie high gain & low loss.

Please let me know of any help you may have on this subject.

Thanks in advance,
Justin
---
justin@sequent.com - If it gets back to my employer, I didn't say it!!!

2124. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-07 18:27:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <7AUG199413272479@pavo.concordia.ca>
Source record: 116914

In article <1994Aug6.233859.15158@hns.com>, jcheah@hns.com (Jonathon Cheah) writes...
>Dear Sirs,
>
>I heard that that there is a wealth of knowledge on NEC simulation software here in the HAM world. Can someone point me to a ftp site where I can download Fortran source code for NEC, and any other things I can do to get up to speed on NEC....
>
>Thank you,
>
> jcheah@hns.com
>
FTP to netcom.com or netcomX.com where X=2..12 (higher numbers are less busy).
There you will find the source code for many NEC simulators.

73, VE2HVW

2125. Home brew HF transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-07 19:38:31 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776288311snz@arkas.demon.co.uk>
Source record: 116915

Hi! I have, for a number of years, been interested in home-brewing a decent HF transceiver. I don't know about other people, but I find that in modern transceivers there are a plethora of functions which I don't use or need - and this is where my hard-earned bucks are going, and not into providing the basic function - a unit which can adequately handle the harsh RF environment of today's amateur bands. Many of the kits on the market these days have had many corners cut during the design process in order to keep costs down, and therefore tend to lose out badly in areas such as internal shielding to minimise spurii, etc. My ideal transceiver would be a modularised unit which I could use as an experimental test platform. One possible use would be trialling new HF modes, e.g. unplug the SSB module and insert a new modulator / demodulator module required for the new mode.

My question is as follows: does anyone out there have know of suppliers / stockists who carry modular sections suitable for use in such a project. Essentially, I'm looking for all sections of a transceiver, e.g. Oscillators, amps, IF strips, filters, audio processors, modulators, demodulators, power amps, etc.
E.g. where can I buy a 90 MHz IF amplifier strip from? Or, it might be 100 MHz, or even 110 MHz - I don't know yet! What suppliers can sell me an RF amp module which exhibits good third order intermod and blocking performance? Who can sell me an SSB (or even NBFM!) modulator/demodulator section? Has someone designed, tested and marketed a PLL kit?

My interest is not such much in soldering up the modules, but being able to mix and match "off the shelf" units (of proven and known performance) during the system design process in order to come up with an optimum transceiver design.

Thanks in advance, & 73's

VK2ENG "geographically challenged" in G-land

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2126. Where's Zack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-07 20:54:32 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Aug07.165432.5828@wb3ffv.wb3ffv.ampr.org>
Source record: 116818

Please forgive me for cluttering up the system with this. Zack: If you are there, this is the only way I can get an e-mail to you, since I know you're here. For about the last three weeks I have been sending you numerous e-mails, all quite properly addressed, and every last one has been bounced by The System, as "user unknown". Just curious; have you been getting e-mail from anyone lately? Some folks on the QRP list say they have successfully contacted you, but The System sure doesn't think you exist when I try it! 73...

2127. Re: HF preamp circuit NEEDED

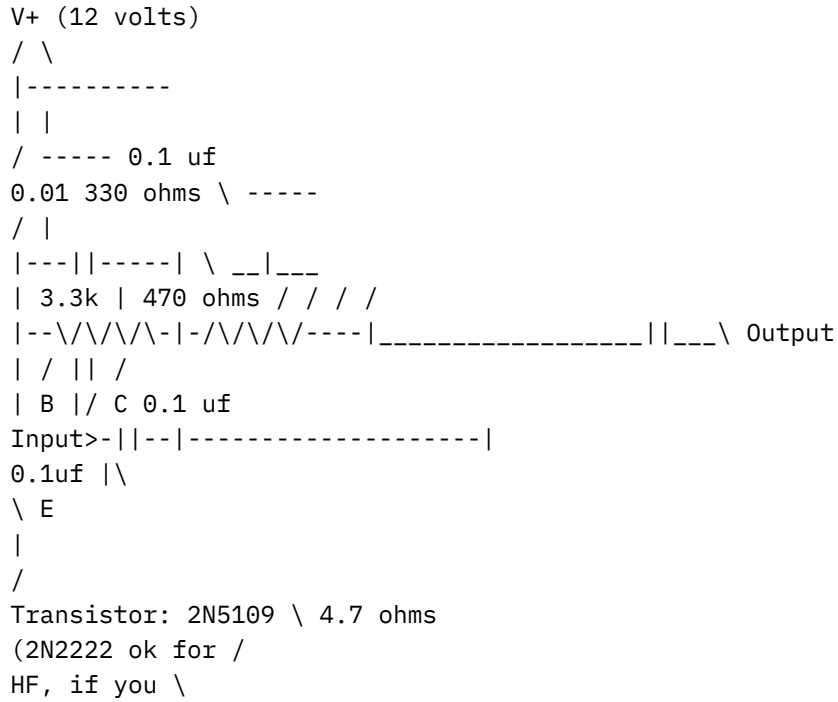
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-07 22:10:31 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <3753@uugate.wa7slg.ampr.org>
Source record: 116916

Do you *really* need a preamp on your HF rig?
Do this simple test: Listen to a "dead" portion of the band and
note the noise level (listen to the way it sounds if it doesn't move
the S meter.) NOW, disconnect the antenna and connect a dummy load
if you have one.

If the S-meter dropped, you DO NOT need a preamp (unless you wanted to
hear the noise better... I've met stranger people...) If the noise
SOUNDS less, you STILL don't need a preamp unless, again, you REALLY
like the way noise sounds.

The only time I've seen where a preamp would be nice on HF would be if
either your receiver needs a lot of help (My old TR-3 can't always hear
the Mode A 'birds'...) to hear some of the satellites, or if it is just
'plain deaf. Also, one sometimes need a bit of help when using a sub-
optimal antenna (like a Mobile antenna...)

Here is a ubiquitous circuit. I use it on my 6 meter transverter.
Its noise figure is pretty high (about 5db) but then again, since I
can usually hear anything that is there at all, it doesn't need to
be much better... If you use the recommended 2N5109 (the same as an
ECG278) it has good return loss from 1.5 through 70 MHz with about
10-12 db gain. It *will* work with a 2N2222-type transistor through
HF, but its performance will be less than that of the '5109.



insist...) __|___
/ / /

If this is used in front of an HF rig, keep in mind that it will amplify from several 10's of KHz to several hundred MHz (in the case of the 2N5109) so it would be wise to put some sort of bandwidth limiting component in front of it (antenna tuner will usually do it...)

Also, if you aren't planning to put 50 ohms into this thing, don't expect it to be very quiet!

Also, do not skimp on the emitter resistor: It really ought to be there... If you don't have the 4.7, use something between 2.7 and 10 ohms (just don't ground it directly...)

Again, unless you are listening to Satellites, I *really* doubt that you need a preamp...

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

2128. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 00:05:24 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776304324snz@arkas.demon.co.uk>
Source record: 116917

In article <7AUG199413272479@pavo.concordia.ca>
md_hill@pavo.concordia.ca "HILLIER, MARK D." writes:

> FTP to netcom.com or netcomX.com where X=2..12 (higher numbers are less busy).
> There you will find the source code for many NEC simulators.

Hi!

I did this, and was told by the machine that it was no longer anonymous ftp,
and to go to ftp.netcom.com. This I also did; but, couldn't find any
evidence of NEC files - there are literally zillions of directories under /pub,
and nothing appeared obvious. Do you know if the anonymous ftp site still
carries the NEC files, and if so, what directory path should I use to point me
in the general direction of the ballpark?

TIA

VK2ENG "Geographically challenged" in G-land.

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2129. Re: Handbook

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 12:17:07 UTC
From: randolph@est.enet.dec.com
Message-ID: <325m7t$55q@mrnews.mro.dec.com>
Source record: 116820

In article <1994Aug5.230601.23378@ttinews.tti.com>, sorgatz@avatar.tti.com (Erik Sorgatz) writes...
>And while we're at it, when-Oh-when are they gonna include some amplifier
>circuits for 6m/220/450 & 1.2 that use MODERN TRANSISTORS?? (A water-cooled
>tube amp for 1.2GHz is an accomplishment alright, but not too useful if you're
>planning to run mobile!

Amen to that.
I'd like to see some moderate-power, transistor amplifiers for 6m/2m/220/440, suitable for CW/FM (class C). You can find QRP stuff, or legal limit amps, but anything in between (say, 25-100W out for 1-5W in) is out. There's a couple of these in older handbooks (I have a '76 with a decent pair of 2m amps in it).

Many, many hams run an HT at home, and could use a project like this. Granted, such amps may not be a newbie project, but that's what Elmers are for...
-Tom R. N1OOQ randolph@est.enet.dec.com

2130. another net.success (WAS: xtal application)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 12:35:08 UTC
From: randolph@est.enet.dec.com
Message-ID: <325mpv$55q@mrnews.mro.dec.com>
Source record: 116821

Well, I got my crystal oscillator down to 10 MHz by putting 10uH in series with the crystal... I can tweek it from about 9.995 to 10.001 MHz now. It'd probably make a fine VXO, in fact.
Thanks to those who sent suggestions.
-Tom R. N1OOQ randolph@est.enet.dec.com

2131. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 14:47:39 UTC
From: rdavis@bianca.amd.com
Message-ID: <Cu813H.IBp@txnews.amd.com>
Source record: 116819
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <gregCu2GK4.JGv@netcom.com>, Greg Bullough <greg@netcom.com> wrote:
>
>It's a shame to retire my Drake UV-3 to packet service, now that virtually
>every local repeater requires PL tones.
>
>So I've been thinking about setting up an outboard sub-audible and DTMF
>encoder. Now the encoder and the DTMF pad are easy to obtain. However,
>most of the encoders seem to want a 5-bit encoding of values from 0-31
>to select the sub-audible tones.
>
>The control circuits seem like a significant challenge. Does anyone
>know of a construction article or a kit for a sub-audible encoder
>with a human interface which is better than a row of dip switches?
>
>Greg

Turn the " control circuits" into software and use a microcontroller.
Rick
WD5EBU

2132. Handheld and Saltwater...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 17:57:30 UTC
From: jmhill@duck.WPI.EDU
Message-ID: <325rma$1g6@bigboote.WPI.EDU>
Source record: 116822

Hello all;
This is the first place I could think of to post just such a note, if anyone can suggest another place I'd appreciate the pointer.

Here is the problem I'm facing, I have a friend who managed to dip a marine band handheld radio into the ocean for a short moment. Although the moment was short, the radio was not immediately rinsed with fresh water, thus some corrosion of parts must have taken place.

I'd appreciate some advice, what kind of nasty business can saltwater do to a radio? Anyone ever manage to dip a radio and manage to fix it afterwards? The owner of this particular radio went back to the point of sale, the sales person said in appoximate terms, "the radio is done for...."

The radio is a Realistic MTX-120 VHF Marine Transceiver. The model number is 19-1050, and serial number 05001434. I'd apprciate any pointers to where I can find schematics, parts lists, allignment proceedures, but especially troubleshooting and testing guidelines. I do have access to suitable lab test gear.

I'm just starting my adventure, so advice is welcomed. I noticed the Uniden logo inside the radio cabinet. Thus, the radio must have been manufactured for Realistic by Uniden.

Thanks;
Jonathan Hill/N1QOL

2133. Re: Home brew HF transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 18:26:07 UTC
From: jmhill@duck.WPI.EDU
Message-ID: <325tbv$1g6@bigboote.WPI.EDU>
Source record: 116823

Hi;

No doubt RF building blocks do exist, there are a few companies that
make such modules, sorry I don't have a list on the top of my head.
I've seen a few guys make references to mini-circuits. Thats one company
that makes plug and play modules, there seems to be oodles of companies that
make similar stuff. I've heard that Motorolla makes power amplifier modules,
but don't know if the parts cover that frquency range. I have seen a few
advertisements for such items but have tried none of them myself, sorry.
I cannot make any claims since I don't know personally about the stuff.

One thing that you must be careful of is that many manufactured parts
are only cost effective if they are manufactured AND sold in large quantities.
In other words, in building your radio yourself the final price tag may be
far more exspensive than a manufactured radio. If you are really not so
concerend with price, but feel a need to build something that is unavailable
then you may feel more comfortable.

If you possibly can, try to use "standard" parts to save yourself some
money. You can benefit from selecting parts that are meant to be used for
consumer products, say cellular telephone.......Many parts used to build
homebrew gear was meant for other gear. For example some of the transistors
used in homebrew ham gear were actually designed for use with consumer grade
CB radios.....

Good luck in your endours...
Jonathan/N1QOL

2134. Radio signalling under water?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 18:59:21 UTC
From: acooney@netcom.com
Message-ID: <acooneyCu8Cqy.G2u@netcom.com>
Source record: 116824
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

I'm in need of advice and/or information on getting signals through
to a submerged remote vehicle. We're currently running at about 50MHz,
mostly due to the availability of six meter radio control gear. I know
the Navy uses a buried VLF array to get to submarines at depth, and I
wonder if I could use a *very* reduced scale version of what they're
running -- perhaps a submerged loop? I've considered using ultrasonics,
and any advice in that area would be invaluable as well

Oh, I should mention that I'm interested in distances on the order of
fifty to a hundred feet, if possible.

Any and all input is welcomed. :) Thanks for your time!

Cheers,
Alan Cooney
acooney@netcom.com
WD6DES

2135. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 19:25:49 UTC
From: peter@3com.com
Message-ID: <3032@bridge2.NSD.3Com.COM>
Source record: 116844

In article 7s7@netcom.com, btoback@netcom.com (Bruce Toback) writes:
>In article <gregCu2GK4.JGv@netcom.com> greg@netcom.com (Greg Bullough) writes:
>>
>>It's a shame to retire my Drake UV-3 to packet service, now that virtually
>>every local repeater requires PL tones.
>>
>>So I've been thinking about setting up an outboard sub-audible and DTMF
>>encoder. Now the encoder and the DTMF pad are easy to obtain. However,
>>most of the encoders seem to want a 5-bit encoding of values from 0-31
>>to select the sub-audible tones.
>
>Communication Specialists has an encoder that can be programmed with
>a 31-position switch. You could also use a pair of hexadecimal thumbwheel
>switches with a little translation table, or an EPROM with a switch that
>contains just the PL frequencies you need. How much room do you have
>for the controls? Is there enough room for hex switches, a rotary switch,
>or whatever?

How about using an 87xx series microcontroller and its timer output to generate
a programmable frequency square wave?

Peter Simpson, KA1AXY Peter_Simpson@3com.com
3Com Corporation (508) 836-1719 voice
Northborough, MA 01532 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

2136. Re: How does one make a good, CHEAP, antenna for 2m/70cm???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 19:45:15 UTC
From: guillory@blkbox.com
Message-ID: <32620b$h7e@blkbox.blkbox.COM>
Source record: 116825
Cross-posted to: rec.radio.antenna,rec.radio.amateur.homebrew

Justin Bousquet (justin@sequent.com) wrote:
: Hi there, I am not too sure if you guys get a lot of questions like this,
but
: here's a shot.

: I am looking to make my own CHEAP, high gain/low loss 2m/70cm antenna. II'm planning on operating a 5W handheld (all my budget can afford...) and got a lot of coax cable (not sure what it is but I think it is 8240 if that is
: correct??) I am only going to need about 5-10 feet from the inside of the house to the outside. I was planning on putting up a dipole along the side of the
: house that is always away from the sun. I don't care how long the antenna ends
: up being, I just want the BEST possible range...ie high gain & low loss.

I am sure someone will get sick of me mentioning it again but...

The August issue of 73 has very good plan for a 2m/70cm antenna. I built
one and it works great for me. It cost about US$8 to build. It can
be made in a base or mobile version. (I built the base version.)

George Guillory, KC5HBT
guillory@blkbox.com
"To stand in silence when they should be protesting
makes cowards of men." Abraham Lincoln

2137. Phase shifters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 21:26:11 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776381171snz@arkas.demon.co.uk>
Source record: 116827

Who knows of a circuit that will do this?

```
[==============]
[ Variable ]
-------->[ Phase ]------->
Input signal [ Shifter ] Output signal with phase P2
with phase P1 [==============] linearly dependent upon input
I phase P1 and control variable C.
I
I
Control ^
Variable C, e.g. volts, current, (via digital word value!?!) etc.
```

This has to operate at RF, i.e. somewhere above 30 MHz, and preferrably somewhere in the 60 to 100 MHz range. It would be nice to have a wideband circuit, but I suspect that it will be narrow band, and this will do.

Circuit design needs to be repeatable, i.e. if I build (or get built) say 8 or so, then I should be able to get the same results out of each one for the given input conditions. Some set-up tuning is ok.

Linear dependence of P2 on P1 and C can be non-linear: so long as it's predictable and not wildly non-linear!

Preferred phase shift range is > +/- 90 degrees, but will settle for less if that's all there is.

Why do I want this? For an active HF phased array antenna design which requires phase shifting as one means of achieving beam-forming.

73's and TIA

VK2ENG in G-land.

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2138. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 21:55:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <8AUG199416550806@pavo.concordia.ca>
Source record: 116826

>
>I did this, and was told by the machine that it was no longer anonymous ftp,
>and to go to ftp.netcom.com. This I also did; but, couldn't find any
>evidence of NEC files - there are literally zillions of directories under /pub,
>and nothing appeared obvious. Do you know if the anonymous ftp site still
>carries the NEC files, and if so, what directory path should I use to point me
>in the general direction of the ballpark?
>
>TIA
>
>VK2ENG "Geographically challenged" in G-land.

Well, I never actually tried the address, I just had it marked down somewhere.
I'm afraid I don't know any more about it.

73, VE2HVW

2139. Re: Handheld and Saltwater...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 22:06:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <8AUG199417060920@pavo.concordia.ca>
Source record: 116828

In article <325rma$1g6@bigboote.WPI.EDU>, jmhill@duck.WPI.EDU (Jonathan M Hill) writes...
>Hello all;
> This is the first place I could think of to post just such a note, if
>anyone can suggest another place I'd appreciate the pointer.
>
> Here is the problem I'm facing, I have a friend who managed to dip a
>marine band handheld radio into the ocean for a short moment. Although the
>moment was short, the radio was not immediately rinsed with fresh water,
>thus some corrosion of parts must have taken place.
>
> I'd appreciate some advice, what kind of nasty business can saltwater
>do to a radio? Anyone ever manage to dip a radio and manage to fix it
>afterwards? The owner of this particular radio went back to the point of
>sale, the sales person said in appoximate terms, "the radio is done for...."
>
> The radio is a Realistic MTX-120 VHF Marine Transceiver. The model
>number is 19-1050, and serial number 05001434. I'd apprciate any pointers
>to where I can find schematics, parts lists, allignment proceedures, but
>especially troubleshooting and testing guidelines. I do have access to
>suitable lab test gear.
>
> I'm just starting my adventure, so advice is welcomed. I noticed the
>Uniden logo inside the radio cabinet. Thus, the radio must have been
>manufactured for Realistic by Uniden.
>
> Thanks;
>
Water damaged equipment is often repairable. The most important thing is NOT TO
TURN IT ON until you have had a chance to do the following:

Open the radio. Take an old toothbrush and scrub the boards *carefuly* under
luke-warm running water. In extreme cases, you might have to use a mild
detergent (be careful that it doesn't eat anything). Of course, avoid getting
water into anything like transformers etc.

If there are components that are obviously too far gone, you will have to
replace them; although if it was just a quick dunk, you are probably alright.
Next, put the thing (minus the case) into the oven at about 60 deg. C and
leave it for several hours. When it is cool, reassemble the unit but hook up
a variable power supply in place of the batteries. Slowly bring up the voltage
to the rated nominal voltage. NOW turn it on. If you were careful, meticulous,
and somewhat lucky, the radio will be fine.

Good luck

73 de VE2HVW

2140. MOTOROLA BATTERY TO ICOM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 22:15:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.1008.2645@aquila.com>
Source record: 116840

Hello All, I wonder if anyone knows of an adapter for Motorola MT1000 batterys for use with an ICOM or RS HTX-202. And if there is such an animal where can I get one and how much? TNX..
* RM 1.3 00559 *

2141. Re: Phase shifters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 22:41:43 UTC
From: gay@selkirk.sfu.ca
Message-ID: <gay.776385703@sfu.ca>
Source record: 116830

Michael@arkas.demon.co.uk (Michael J Dower) writes:

>Who knows of a circuit that will do this?

> [==============]
> [Variable]
> -------->[Phase]------->
>Input signal [Shifter] Output signal with phase P2
>with phase P1 [==============] linearly dependent upon input
> I phase P1 and control variable C.
> I
> I
> Control ^
> Variable C, e.g. volts, current, (via digital word value!?!) etc.

>This has to operate at RF, i.e. somewhere above 30 MHz, and preferrably
>somewhere in the 60 to 100 MHz range. It would be nice to have a wideband

Merrimac Industries (201) 575-1300 sell both digital and analog
voltage controlled units with a frequency span of up to 1 octave, some
of which are in the range you mention.

2142. DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 22:55:20 UTC
From: ahall@ux4.cso.uiuc.edu
Message-ID: <ahall-0808941758330001@ruger-68.slip.uiuc.edu>
Source record: 116829

Hello again everyone,

This is kinda an update to the question I first posed about homebrew DSP. I have since my last posting recieved the chip that I had new was coming, and I have some information that might help anyone who wants to make suggestions to me.

Again, I must say that I am very new to the concepts involved with DSP, and I have a long way to go to understand these concepts. So, even if you think you can't give me a schematic or anything, but know some basic concepts, and where you learned about them, I'd love to hear from you. Right now, I think I am looking at a year-long project (school and work take precedence, so this may be a sunday-night hobby sort of thing), and I know that a lot of it is going to be research-based.

I have recently read the following articles, and I suggest them to anyone who is just like me and starting out. (the very basics and not too long, but you get the idea).

"Low Cost Digital Signal Processing for the Radio Amateur" September 1992 QST pages 43-51

"An Introduction to Digital Signal Processing" July 1991 QST pages 35-37

Again, one is basic, one is a project. This is obviously not the best sources, and in no way can cover even some of the basic concepts, so it's just a sort of "hello, here is a bit on DSP" thing.

-Please send me your suggestions on articles/books/ftpsites for any information, or programs related to DSP.

Here's some information about the Analog Devices chip that a good friend gave me.:

ADSP-21msp50 (I have the non-surface mount chip- ceramic case, 144pins I think)
16bit Sigma-Delta ADC and DAC
Anti-aliasing and anti-imaging filters
programmable gain block,
AGC and digital voiceband filtering
2k words of on-chip program memory (RAM)
1k words of on-chip data memory (RAM)

I guess from the literature on the chip that I have, that it is widely used for Voice compression/encryption, and manipulation. It is only good for audio-freq's because of the sampling speeds, but that's all we need for ham purposes right?

If anyone can point me in a direction, please e-mail me. Right now, I pretty much am up in the air about the needed computations for ham's basic DSP filters etc. I'd love to find some example (ham-filter type) code for the eprom programs for any dsp chip.

(I have to thank Ralph kc3f for the great e-mail help he's been giving me. -thanks!)

He suggests the following reading:

The best book I've seen on digital filtering in general is called
Discrete Time Signal Processing by Oppenheim & Schafer (1989).
Another good text would be Digital and Analog Communications Systems by Couch (1993).
Both of these are EE texts, but if you have had calculus and DE you ought to be able to make some headway.

Thanks for the help! I'm sure I'll be posting again over the course of the year :) This is going to take a while :)
But, if you don't learn, what's the point of home-brew? So far (only 1 project, and one going) I love home-brew. You learn TONS, and you can show off your work (not to mention you get a useful product in the end- usually :)

I look forward to any comments/suggestions/help that anyone gives to me.

TNX again et 73!!

Allen Hall n9rzc@uiuc.edu

2143. Re: Handheld and Saltwater...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 23:53:41 UTC
From: ddietz@rhi.hi.is
Message-ID: <326gi5$htg@eldborg.rhi.hi.is>
Source record: 116831

In <325rma$1g6@bigboote.WPI.EDU> jmhill@duck.WPI.EDU (Jonathan M Hill) writes:

>Hello all;
> This is the first place I could think of to post just such a note, if
>anyone can suggest another place I'd appreciate the pointer.

> Here is the problem I'm facing, I have a friend who managed to dip a
>marine band handheld radio into the ocean for a short moment. Although the
>moment was short, the radio was not immediately rinsed with fresh water,
>thus some corrosion of parts must have taken place.

> I'd appreciate some advice, what kind of nasty business can saltwater
>do to a radio? Anyone ever manage to dip a radio and manage to fix it
>afterwards? The owner of this particular radio went back to the point of
>sale, the sales person said in appoximate terms, "the radio is done for...."

> The radio is a Realistic MTX-120 VHF Marine Transceiver. The model
>number is 19-1050, and serial number 05001434. I'd apprciate any pointers
>to where I can find schematics, parts lists, allignment proceedures, but
>especially troubleshooting and testing guidelines. I do have access to
>suitable lab test gear.

> I'm just starting my adventure, so advice is welcomed. I noticed the
>Uniden logo inside the radio cabinet. Thus, the radio must have been
>manufactured for Realistic by Uniden.

> Thanks;
> Jonathan Hill/N1QOL

Well, Jonathan, you've got some work to do. I've seen handhelds take a swim in the Chesapeake Bay and Patuxent River. I'm not sure of the total time that the rigs were actually in the water, or how long it was until they were delivered to us for servicing. The first thing we did was to give them tap water baths, and then an isopropyl alcohol bath followed by a long, slow bake in an oven to dry them out. Some cleaning of the traces and contacts was done with a small acid brush while in the alcohol bath.

Of course, some of the rigs were turned on and needed some troubleshooting and repairs to bring them back to life, but there were a few that worked immediately after backing and powering up!

You should be able to order a service manual for any Radio Shack equipment directly from your local store, unless they have changed their policies in the past year or so since I've been overseas here. Which I doubt.
I would base my opinion whether or not to repair, on who it was that told you they wouldn't do it. That is, did you have them send it off to the regional repair center, or was it just the store manager that looked at

it/heard the story, or even someone less.

Good luck with your rig.

73 de Don, N3KFH /TF8

Certified Electronics Technician (ISCET) MD-250

Internet: n3kfh@centrum.is or ddietz@rhi.hi.is
Packet: n3kfh@tf3bbs.isl.eu or n3kfh@k4ry.#cenal.al.usa.noam

2144. Re: Handbook

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-08 23:59:54 UTC
From: hbrown@nadir.resd
Message-ID: <1994Aug8.235954.21300@knight.vf.ge.com>
Source record: 116835

Tom, I can provide info on a 3 band solid state linear amp covering 6, 2 and 222 MHz and everything in between. It was designed by John, KB3XG, and a paper was given at the Mid Atlantic VHF Conference last year. It uses two FETs and runs on 28 volts. You'll have to build a 12 to 28 volt power converter if you're going mobile but that isn't all that difficult these days. Drop me a note with your address onit and I'll send you the info. It's built on G10 board and isn't all that difficult to buile but it isn
't a "Heathkit".

73
Harry, W3IIT

2145. Re: Handbook

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 00:20:19 UTC
From: hbrown@nadir.resd
Message-ID: <1994Aug9.002019.21584@knight.vf.ge.com>
Source record: 116832

Tom,
I'm new to this and I think I may have screwed up the reply to the question on dolif state amplifiers. In any case whoever is interested, the 6 meter, 2 meter, and 222 MHz broadband amplifier has around 120 watts output linear.

73,
Harry, W3IIT

2146. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 01:11:34 UTC
From: jeffj@crl.com
Message-ID: <326l46$bds@nntp.crl.com>
Source record: 116834

HILLIER, MARK D. (md_hill@pavo.concordia.ca) wrote:
: >
: >I did this, and was told by the machine that it was no longer anonymous ftp,
: >and to go to ftp.netcom.com. This I also did; but, couldn't find any
: >evidence of NEC files - there are literally zillions of directories under /pub,
: >and nothing appeared obvious. Do you know if the anonymous ftp site still
: >carries the NEC files, and if so, what directory path should I use to point me
: >in the general direction of the ballpark?

Look in a directory called randall, randal, rander something like that.
Sorry this from memory and after a rough weekend is the best I can do
right now.

Jeff

--
jeffj@crl.com | If work for a living and think the Republican party is your
AB6MB | friend. Ask Republican congressmen if they ever would side
| with labor over business. Then watch them laugh in your face!

2147. Re: Handbook

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 02:46:34 UTC
From: harrisok@vax.sonoma.edu
Message-ID: <1994Aug8.184634.1@vax.sonoma.edu>
Source record: 116833

In article <1994Aug9.002019.21584@knight.vf.ge.com>, hbrown@nadir.resd (Harry H. Brown) writes:

> Tom,
> I'm new to this and I think I may have screwed up the reply to the question
> on dolif state amplifiers. In any case whoever is interested, the 6 meter,
> 2 meter, and 222 MHz broadband amplifier has around 120 watts output linear.
>
> 73,
> Harry, W3IIT

Hi Harry... I'd be interested in info regarding this. I tried to send you email but it was returned. Please email me.

73,
Ken
--

Ken Harrison	I once thought I was wrong...
N6MHG	
harrisok@sonoma.edu	...but I was mistaken.

2148. 10M MOD FOR A TRAM D-62

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 04:18:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.1012.2645@aquila.com>
Source record: 116848

Hello All. I'm looking for 10m mod for a Tram D-62. Any info would be greatly appreciated. TNX..
* RM 1.3 00559 *

2149. 10M MOD FOR TRC-450?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 04:19:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.1013.2645@aquila.com>
Source record: 116849

Hello All. I'm looking for information on modifying the Model
RS TRC-450 11m Rig up to 10 meters? Any info would be greatly
appreciated. TNX..
* RM 1.3 00559 *

2150. Need some help with the design of an Operational Amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 05:16:57 UTC
From: christos@kuhub.cc.ukans.edu
Message-ID: <1994Aug9.001658.70244@kuhub.cc.ukans.edu>
Source record: 116836
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

hello there,

I have a question concerning design of a simple amplifier using
operational amplifiers. I am simply designing a noninverting amplifier with a
gain of 2, that is R1=R2 (Closed Loop Gain=(1+R2/R1)). No matter what I apply
to the input of the amp the output always saturates to -11 Volts. Even if no
input is applied the output still gives a -11V.
The voltages that I am applying to the Vcc+ and Vcc- of the op amp are +12V and
-12V respectively. I am using the LM 741 opamp for this application.

Does anybody in this group happen to know what the problem might be?

I would appreciate any relevant response.

Please e-mail.

Thanks in advance

Chris

2151. Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 07:16:05 UTC
From: cyamamot@marconi.jpl.nasa.gov
Message-ID: <327afl$j85@marconi.jpl.nasa.gov>
Source record: 116837
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Greetings!

Does anyone remember an old Radio Electronics or Popular Electronics article that allowed one to use the colorburst subcarrier of any TV station for use as a frequency reference. I remember reading that only network stations (CBS, ABC & NBC) have their colorburst traceable to NIST, but still it's a good stable source for a reference.

I remember the board used some special chip that took 3.565 (whatever) the coloburst freq is and put out 60Hz, 100Hz or some similar reference frequency standard. I believe it had some sort of op-amp that inductively coupled the colorburst signal out of a nearby TV to this special chip.

Well any leads to parts or even a more recent article about using TV signals for frequency standards would be apprciated.

Thanks!
- Cliff

2152. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 10:26:42 UTC
From: jlundgr@eis.calstate.edu
Message-ID: <327ll2$fho@eis.calstate.edu>
Source record: 116838
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Why would you want to use a TV station when there is WWV for free, and it's more accurate??

If you have an app that needs this kind of accuracy, the WVV signal can be received at the usual standard freqs of 2.5, 5, 10, 20 MHz, and the long wave on, I think it's 60KHz. Or if you're worried about the atmospheric interference, there is also a way to call the NIST over land line.

How about an H-P standard freq generator for a few tens of thousands of $. I forget if it's cesium or rubidium... probably cesium.

Don't know about your area, but the TV stations go off the air at night around here. WWV and WWVH won't have that problem. One or the other will always be available. 'Aloha'.

--
$$$$$$ John Lundgren $$$$$$ jlundgr@eis.calstate.edu $$$$$$
$$$$$$ jlundgre@pop.rancho.cc.ca.us $$$$$$ Standard Disclaimers apply.
Rancho Santiago College - 17th St. at Bristol - Santa Ana, CA 92706
$$$$$$ Two rights don't make a wrong, they make an airplane. $$$$$$
$$$$$ "The man who toys with the most dies, wins." - Dr. Kevorkian? $$$$$

2153. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 10:28:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940809102827OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 116843
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

>Why would you want to use a TV station when there is WWV for free, and
>it's more accurate??

You have it backwards -- the color carrier (when it worked), was
more accurate. They were both based on atomic standards and the
TV signal since it is local and VHF would have less noise than a
HF WWV signal.

Now however, with the widespread use of digital frame synchronizers
you can no longer count on the color carrier being better than a
normal crystal oscillator, with the possible exceptions of a few TV
stations located at network sites (Los Angeles, New York?).

Look into GPS (satellite microwave spread spectrum), LORAN-C (100
Khz pulse), or WWVB (60 Khz).

>long wave on, I think it's 60KHz. Or if you're worried about the
>atmospheric interference, there is also a way to call the NIST over land
>line.

And get variable phone line delays as well as freqency shifts..

2154. Re: Handbook

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 10:35:41 UTC
From: randolph@est.enet.dec.com
Message-ID: <328698$eo0@mrnews.mro.dec.com>
Source record: 116841

In article <1994Aug8.235954.21300@knight.vf.ge.com>, hbrown@nadir.resd (Harry H. Brown) writes...
>Tom, I can provide info on a 3 band solid state linear amp covering 6, 2 and
>222 MHz and everything in between.
> ...
>Harry, W3IIT

I wasn't so much looking for a project as lamenting the fact that no such is in the Handbook. It sounds great, though! Exactly the kind of project a lot of hams could use.

I'd like to see less 1000W dummy loads and 2000W forced-air cooled amplifiers, and more 5W in, 50W out 2m amps, and easy to build test equipment to make sure your project is up to standards (some of that in there already). Also, some simple transistor rigs for the fun but little-used modes. The 6m CW/SSB rig in "Solid State Design" is a good example. Also like to see enough design info presented that the projects can be understood and adapted to other needs - the Handbook is already pretty good about the level of math included, just need more of it where appropriate.

BTW, I have all the parts for that 2m amp in the '76 handbook - you can still get them. I'm gonna try putting it together soon.
-Tom R. N1OOQ randolph@est.enet.dec.com

2155. Re: How does one make a good, CHEAP, antenna for 2m/70cm???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 14:29:35 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug9.142935.10074@ke4zv.atl.ga.us>
Source record: 116850
Cross-posted to: rec.radio.antenna,rec.radio.amateur.homebrew

In article <1994Aug7.061607.15387@sequent.com> justin@sequent.com (Justin Bousquet) writes:
>Hi there, I am not too sure if you guys get a lot of questions like this, but
>here's a shot.
>
> I am looking to make my own CHEAP, high gain/low loss 2m/70cm antenna. II'm planning on operating a 5W handheld (all my budget can afford...) and got a lot of coax cable (not sure what it is but I think it is 8240 if that is
>correct??) I am only going to need about 5-10 feet from the inside of the house to the outside. I was planning on putting up a dipole along the side of the
>house that is always away from the sun. I don't care how long the antenna ends
>up being, I just want the BEST possible range...ie high gain & low loss.
>
> Please let me know of any help you may have on this subject.

Well since you have lots of coax, the highest gain antennas you can
cheaply build would be coaxial colinear verticals. Construction plans
appeared in 73 Magazine a while back. As with any VHF antenna, the
higher you can mount them, the better your signal will be.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2156. Re: Radio signalling under water?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 14:44:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug9.144413.10323@ke4zv.atl.ga.us>
Source record: 116852
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

In article <acooneyCu8Cqy.G2u@netcom.com> acooney@netcom.com (Alan Cooney) writes:
>I'm in need of advice and/or information on getting signals through
>to a submerged remote vehicle. We're currently running at about 50MHz,
>mostly due to the availability of six meter radio control gear. I know
>the Navy uses a buried VLF array to get to submarines at depth, and I
>wonder if I could use a *very* reduced scale version of what they're
>running -- perhaps a submerged loop? I've considered using ultrasonics,
>and any advice in that area would be invaluable as well
>
>Oh, I should mention that I'm interested in distances on the order of
>fifty to a hundred feet, if possible.

Ah, this is easy. At VLF this is still near field induction. Just
submerge as large a loop (multi-turn) as you can, and pump some
power into it. You can use a ferrite loaded loop on the sub. There
will be directional effects as the loop orientations change. It
may be necessary to use two loops at right angles.

You can also use sheet conductance for this task. That just requires
two "ground" rods or probes you drive into the bank or place directly
in the water. Feed power to these, and use probes at either end of
the sub to sample the electric field in the water.

In either case, operation directly at audio frequencies will work.
In fact, you can just amplify modem tones for the sheet conductance
method. Something on the order of 50 watts should work great. Just
use an audio amp driving a line transformer to match impedances. The
receiver is nothing but a phono preamp driving a modem chip. (You
may need a 60 Hz notch filter here.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2157. Re: DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 15:38:31 UTC
From: btoback@netcom.com
Message-ID: <btobackCu9y48.7qv@netcom.com>
Source record: 116842

In article <ahall-0808941758330001@ruger-68.slip.uiuc.edu> ahall@ux4.cso.uiuc.edu (Allen Hall) writes:
>Hello again everyone,
>
>This is kinda an update to the question I first posed about homebrew DSP.
>I have since my last posting recieved the chip that I had new was coming,
>and I have some information that might help anyone who wants to make
>suggestions to me.
>...
>-Please send me your suggestions on articles/books/ftpsites for any
>information, or programs related to DSP.

One book I've found particularly helpful is "Digital Signal Processing in Basic" published by Butterworth (!) and written by G.B. Lockhart and B.M.G. Cheetham.
It covers Fourier transforms, filtering, and other things; it has both the math and the algorithms. An excellent introduction.

-- Bruce KN6MN

2158. Re: Multiplexed microwave links

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 15:39:54 UTC
From: cheech@med.unc.edu
Message-ID: <32880a$pjm@bigblue.oit.unc.edu>
Source record: 116839

In article <31u3ks$17q2@hermes.acs.ryerson.ca>,
Donald Jeff Dionne <jeff@ee.ryerson.ca> wrote:

>NO WAY..... MACom will sell you a pir of 10GHz trancievers for $70. not 170, not 700,
$70. No kidding!
>
>73! de Jeff / VE3DJF

MACom? MACom?!? Are you sure that's not for 10,000 units? The last
time I tried to deal with MACom (admittedly about five years ago) they
weren't interested in my measley several hundred dollar order. They
were perfectly willing to give me a hard time as long as I paid
the long distances charges.

I would be glad to hear that they have become more reasonable. I've
been ignoring their ads because I didn't need the grief.

Greg Young AC4YT
cheech@med.unc.edu

2159. cell sites

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 15:55:09 UTC
From: yctcsl@cerfnet.com
Message-ID: <3289nn$obm@news.cerf.net>
Source record: 116847
Cross-posted to: sci.electronics,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.digital.misc

Does anyone have any info regarding the rate paid by PacBell (AirTouch) for establishing a cell site lease. The offers been made however I'd be interested to find out just what being paid these days.

2160. Re: HF preamp circuit - CORRECTION

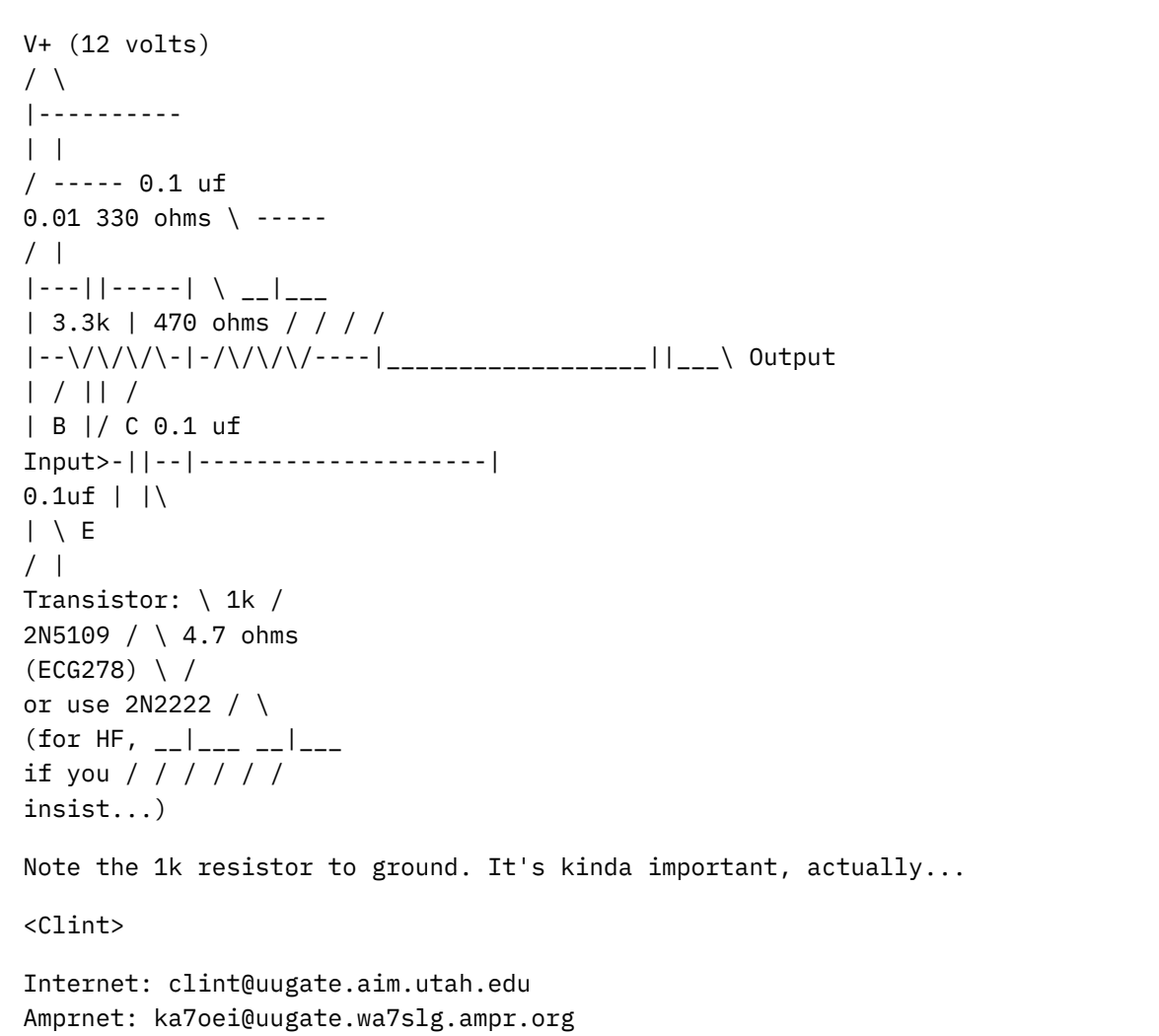
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 16:19:47 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <78@uugate.wa7slg.ampr.org>
Source record: 116855

ACK!!!

I forgot a resistor on the ubiquitous amplifier...

Here it is (sigh...) again, less-incorrect...

****



Note the 1k resistor to ground. It's kinda important, actually...

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

2161. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 17:24:48 UTC
From: billp@syntex.com
Message-ID: <328e50$6l1@yoda.Syntex.Com>
Source record: 116853

In article j85@marconi.jpl.nasa.gov, cyamamot@marconi.jpl.nasa.gov (Clifford Yamamoto) writes:
>Greetings!
>
>Does anyone remember an old Radio Electronics or Popular Electronics
>article that allowed one to use the colorburst subcarrier of any TV
>station for use as a frequency reference. I remember reading that only
>network stations (CBS, ABC & NBC) have their colorburst traceable to
>NIST, but still it's a good stable source for a reference.
>
>I remember the board used some special chip that took 3.565 (whatever)
>the coloburst freq is and put out 60Hz, 100Hz or some similar reference
>frequency standard. I believe it had some sort of op-amp that inductively
>coupled the colorburst signal out of a nearby TV to this special chip.
>
>Well any leads to parts or even a more recent article about using
>TV signals for frequency standards would be apprciated.
>
>Thanks!
>- Cliff

Well, it use to be true that the network stations were traceable to NIST (then NBS). That was because they all took feeds (timing and all) directly from the network feed. 10 or so years ago all the stations started to use frame stores that could retime network feeds to locally generated timing. This solved a bunch of timing problems for the stations and simplified things. It also put an end to the traceability (and short term acuracy) of the color burst and NIST abandoned the program. Now WWV(B,L,H), Loran C, and GPS are about the only broadcast standards tracable to NIST.

If you only need a local syncronizing standard you could still use a TV station's color burst for that. In fact I suspect, though there are no guarantees, that the big network stations have pretty accurate frequency standards distributed throughout the the station. But there isn't any traceability and if you happen to be unlucky enough to be calibrating some instrunments the day the stations clock source is on the fritz you have no way of knowing. Still I have thought that using TV signal components like color burst would be a nice way to syncronize a bunch of simucast transmitters for a ham wide area repeater or provide a timing source for a spread spectrum link.

I haven't seen any articles published since NIST gave the program up. And that must have been as much as 10 years ago now.

- Bill

```
=========================================================================
# Bill Putney - WB6RFW | billp@synseer.Syntex.COM #
# Syntex U.S.A. | olivea!synseer!billp #
# M.S. A5-6 |-------------------------------#
# 3401 Hillview Ave. | P.O.T.S. (415) 855-1259 #
# Palo Alto, CA 94303 | FAX (415) 855-5988 #
#-----------------------------------------------------------------------#
# X400: G=bill;S=putney;P=syntex;A=attmail #
=========================================================================
```

2162. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 18:03:38 UTC
From: champion@cyberspace.com
Message-ID: <328gdq$n8h@cyberspace.com>
Source record: 116845
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Clifford Yamamoto (cyamamot@marconi.jpl.nasa.gov) wrote:
: Greetings!

: Does anyone remember an old Radio Electronics or Popular Electronics
: article that allowed one to use the colorburst subcarrier of any TV
: station for use as a frequency reference. I remember reading that only
: network stations (CBS, ABC & NBC) have their colorburst traceable to
: NIST, but still it's a good stable source for a reference.

: I remember the board used some special chip that took 3.565 (whatever)
: the coloburst freq is and put out 60Hz, 100Hz or some similar reference
: frequency standard. I believe it had some sort of op-amp that inductively
: coupled the colorburst signal out of a nearby TV to this special chip.

: Well any leads to parts or even a more recent article about using
: TV signals for frequency standards would be apprciated.

: Thanks!

I built one of these back in 1978 (or thereabouts). I never saw the
article but I think I know most of the details. First, the basics:

3.58MHz is actually derived from the ratio of two integers. I don't
remember exactly what they are but, for now we will assume they are
14 and 39 (but I know these aren't correct). So 3.58MHz = 10MHz x 14 / 39.
Using a phase-lock-loop, you can therefore derive 1MHz, 5MHz, and 10MHz
from 3.58MHz. Similarly, you can derive 3.58MHz from 1, 5, or 10MHz.

The 3.58MHz signal in the TV is locked to the reference at the source
of the TV Signal. Your TV uses a PLL for this. Every horiz blanking
interval, the TV's local 3.58MHz oscillator is compared with a burst
of 3.58MHz from the transmitter (the colorburst). This way, your TV's
3.58MHz reference is kept in sync with the 3.58MHz at the transmitter.

There is no guarantee that the 3.58MHz of the source (transmitter) is
correct. It is usually close but definately not a great reference.
When the TV programming comes from the Network (not the local station),
the 3.58MHz is usually very close. (I think they use those expensive
Ceisium (sp) Oscillators.) The evening news is a good network feed.

The FCC (or maybe the Federal Bureau of Standards) used to monitor the
networks 3.58MHz color burst signal and publish the deviation on a monthly
basis. This was discontinued in about 1980.

Now, the idea for creating a local lab standard was to build your own
1, 5, or 10MHz oscillator. Derive 3.58MHz from it using a PLL. Use a

phase comparitor to compare your 3.58MHz to that of your TV during a network broadcast. Record the deviation as detected by the phase comparitor (usually measured in seconds/cycle of beat frequency). Compare your deviation to that published in the FCC's monthly report. Adjust the frequency of your reference oscillator and repeat the process.

In my design, I used a high quality Vectron 10MHz Oscillator-complete with an oven to maintain temperature and oscillator stability. I think the oscillator was rated a 1 part in 100,000,000,000 for short term and 1 part in 1,000,000,000 for long term stability. I think it cost around $200.

I divided its output by 2 and 5 to create a 5MHz and a 1 MHz output respectively. I also divided the 10MHz by 39 to create 256KHz and a PLL to multiply this by 14 to get 3.58MHz. The PLL requires a 3.58MHz VCO which I built using a voltage controlled cap (diac?) and an ordinary 3.58MHz crystal from a TV.

I had an input from the TV's 3.58MHz oscillator and used a phase comparitor to compare this with my derived 3.58MHz. The output went to a analog meter (for making rough adjustments) and to a chart recorder when the phase difference was very small (measuring several seconds per beat).

In addition, I could use the phase comparitor to compare the 1, 5, or 10MHz output with an external signal. This allowed me to calibrate other equipment to my standard.

This project was complicated by the fact that all these frequencies operating in the same cabinet result in a lot of coupling. I had every oscillator (the 10MHz and the 3.58MHz) and both phase detectors (the one from the PLL and the one to compare the internal reference to an external source) in separate metal boxes. I think I even used separate power supplies for each circuit.

It worked well and, as far a I know, is still is use today.

Hope this helps and good luck.

Mark Champion
--
Mark Champion

2163. Re: Multiplexed microwave links

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 18:17:15 UTC
From: jeff@ee.ryerson.ca
Message-ID: <328h7b$vgm@hermes.acs.ryerson.ca>
Source record: 116846

Greg Young (cheech@med.unc.edu) wrote:
: In article <31u3ks$17q2@hermes.acs.ryerson.ca>,
: Donald Jeff Dionne <jeff@ee.ryerson.ca> wrote:

: >NO WAY..... MACom will sell you a pir of 10GHz trancievers for $70. not 170, not 700, $70. No kidding!
: >
: >73! de Jeff / VE3DJF

: MACom? MACom?!? Are you sure that's not for 10,000 units? The last
: time I tried to deal with MACom (admittedly about five years ago) they
: weren't interested in my measley several hundred dollar order. They
: were perfectly willing to give me a hard time as long as I paid
: the long distances charges.

Actually, they are really personable. I've had a few people mail me, so
here's more detail.

The units you want are the ones WITHOUT varactor tuning. If you order them
in pairs, and ask them to tune them for the HAM band, you will be quite
happy with the whole thing. They dd the tuning for me for free.

P/N MA86728

1 tuned to 10.345 GHz, 1 tuned to 10.450 GHz

M/A Com
Microwave Associates International Inc.
Burlington, MA
01803 USA
(617) 272-3000

I will be ordering piles more, they do T1 speed data real well.

: I would be glad to hear that they have become more reasonable. I've
: been ignoring their ads because I didn't need the grief.

Perhaps they have learned a thing or two about customer realations, they
are very willing to please, and quite helpful.

: Greg Young AC4YT
: cheech@med.unc.edu
Jeff@EE.Ryerson.Ca

2164. Re: Handheld and Saltwater...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 19:27:08 UTC
From: paulf@abercrombie.Stanford.EDU
Message-ID: <paulf.776460428@abercrombie.Stanford.EDU>
Source record: 116856

One technique that works is to immerse the radio in distilled water as soon as possible after the saltwater exposure, for about five minutes, then let it dry out.

--
-=Paul Flaherty, N9FZX | "We are meant to be masters of destiny,
->paulf@Stanford.EDU | not victims of fate." -- Ronald W. Reagan

2165. Need low thermal coefficient resistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 20:00:01 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-090894120001@tomkreyche.zdlabs.ziff.com>
Source record: 116851

I'm working on a project where the equipment will be subjected to extreme outdoor temperatures, and want to keep thermal drift to a minimum. I've been successful getting low drift op amps but they're worthless without low thermal coefficient resistors. Anybody have any sources?

Thanks, Tom Kreyche KG6YJ

2166. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 20:31:28 UTC
From: jkaidor@synoptics.com
Message-ID: <CuABoH.Buz@synoptics.com>
Source record: 116858

In article j85@marconi.jpl.nasa.gov, cyamamot@marconi.jpl.nasa.gov (Clifford Yamamoto) writes:
>Greetings!
>
>Does anyone remember an old Radio Electronics or Popular Electronics
>article that allowed one to use the colorburst subcarrier of any TV
>station for use as a frequency reference.

**** I seem to remember reading somewhere that none of the stations are transmitting highly accurate subcarriers anymore, now that they have digital frame synchronization hardware. Can anybody confirm or deny?

- Jerry Kaidor, KF6VB

2167. Question about power supply for HTX-202.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-09 20:54:26 UTC
From: drice@crl.com
Message-ID: <znr776465957k@crl>
Source record: 116854
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

I just bought (or am in the process of buying) a power supply for my HTX-202. However the power supply is 13.8VDC and 3A. I know the 202 works fine at ~13.5VDC and 2A (car battery). Will the slightly higher voltage and amperage cause a problem? If it is a problem, I should just be able to add a resistor in series to get the amperage down, correct?

Dennis
--

Dennis Rice drice@crl.com
NAU Flagstaff Waiting for call sign.

2168. Re: Question about power supply for HTX-202.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 00:12:39 UTC
From: sct@po.cwru.edu
Message-ID: <32961n$qvc@usenet.INS.CWRU.Edu>
Source record: 116857
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

(I redirected this to rec.radio.amateur.equipment. Please send all
followups here only. Thanks.)

In article <znr776465957k@crl>,
Dennis Rice <drice@crl.com> wrote:
> I just bought (or am in the process of buying) a power supply for my
> HTX-202. However the power supply is 13.8VDC and 3A. I know the 202
> works fine at ~13.5VDC and 2A (car battery). Will the slightly higher
> voltage and amperage cause a problem?

The voltage might, but it shouldn't really be a problem. Check the 202's
specs for maximum voltage -- it's probably 14V or more.

The current rating of a power supply is a maximum. Anything less is
generally OK, though some switching supplies specify a minimum load
current as well as a maximum. How do you find out whether your HTX-202
will overload the supply? Easy -- check the specs again. This stuff
is always in the manual somewhere, usually near the beginning or the
end.

For reference, my Heath HW24HT dual-band handheld is rated to operate
on anything from 5.5 to 16V and draws up to 1.3A, depending on the
output power and the band. Your power supply would work with it; in
fact, it can supply enough current for two radios like my Heath.

Oh, one more caveat: Be careful if it is a switching power supply.
Some switching supplies have large ripples at a couple of kilohertz
on their outputs. The result can be a whine in a radio's output. The
only way to see if a particular switching supply works well with a
particular radio is to try it out and request some signal reports.
Linear power supplies don't have this problem.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the CYWS
European performance tour 1994

2169. Ocean State Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 01:22:03 UTC
From: ai351@leo.nmc.EDU
Message-ID: <9408100122.AA11350@leo.nmc.edu>
Source record: 116860

Is Ocean State Electronics out of business? I haven't gotten a catalog
from them in ages, and there's no answer at their 800 number.

--
-=-
ai351@leo.nmc.edu David Brodbeck
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-

2170. Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 01:30:43 UTC
From: ai351@leo.nmc.EDU
Message-ID: <9408100130.AA12423@leo.nmc.edu>
Source record: 116861

I need a TCM3105 chip. This is a 16-pin 1200 bps half-duplex modem chip made by Texas Instruments. I need it to build the Poor Man's Packet interface. Does anyone know where this is available in single quantities?

--
-=-
ai351@leo.nmc.edu David Brodbeck
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-

2171. Re: DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 04:01:16 UTC
From: dwilkins@news.delphi.com
Message-ID: <329jec$4ub@news.delphi.com>
Source record: 116862

You might want to try the DSP Starters kit from TI. It is a small board based on the TMS320C26 DSP, with debugger and assembler included. There are some sample programs on the disk that implement a spectrum analyzer.

For more info:
TI DSP Hotline
1-713-274-2320

or FTP to ti.com go to /mirrors/tms320bbs and peruse.

N-Joy
ke4jqv
dwilkins@delphi.com

2172. Re: cell sites

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 04:39:49 UTC
From: billh@ins.infonet.net
Message-ID: <329lml$7bv@insosf1.infonet.net>
Source record: 116863
Cross-posted to:
sci.electronics,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.digital.misc

In article <329e3j$ecu@hpindda.cup.hp.com>, bmp@cup.hp.com (Brian M. Perkin) writes:
>yctcsl@cerfnet.com wrote:
>
>: Does anyone have any info regarding the rate paid by PacBell (AirTouch) for
>: establishing a cell site lease. The offers been made however I'd be interested to
>: find out just what being paid these days.
>
>
>I'd negotiate for a phone or two with free airtime as part of the deal.
>Brian

I know of a ham tt negotiated tt the outfit install and provide maint.
for a ham band repeater, plus the electricity to operate it and they also
would maintain the repeater!

2173. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 06:19:53 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCuB2x6.5vu@netcom.com>
Source record: 116859
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

As others have pointed out, TV stations use frame syncs to accept network programming into their locally generated house sync and burst. Which usually come from a Tek generator with a pretty good crystal osc.

A reason for not directly using the network feed is that the feed goes thru satellites. And those satellites wander some out there in space, introducing some doppler shifts in the TV signal frequencies. So much for tracability.

2174. Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 09:34:44 UTC
From: vimx <vimx@delphi.com>
Message-ID: <BW0S8xE.vimx@delphi.com>
Source record: 116866

I was thinking about how many distinct voices might be possible in a 5 KHz channel. It seems to me as if you could put four voices on a single channel. That is , USB , USB quadrature , LSB , and LSB quadrature. And it seems as if you could build a special receiver to select which one.
It also seems to me that it might be possible to squeeze a third phase into each sideband (like the color signal in a TV does with R,G,B). And also you might be able to put an AM signal and Quadrature AM signal on top of that. Since the AM appears in both sidebands, you could extract it kinda like how stereo L and R are separated in FM radio. A matrix or something. So now we have 8 stations on the same frequency and I think it's possible to separate them so that you only hear one. (on an ordinary receiver you'd hear them all). Is this correct? Maybe I havent thought of all the ways you can squeeze them together. What then is the limit?
If a lot of people are talking in a room you may be able to listen to one particular person and ignore the rest. At some point, there are too many and then you can't. Does this have something to do with it? I think Phase has something to do with where it sounds like someone is coming from. Perhaps its possible to make a microphone/device which would let you hear a single person and not all the others in the room. It probabley would need only two channels (ie. two sidebands or phases). And in that case, there is an infinite number of radio channels,Right?

2175. HELP: Son needs advice on IR detector

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 11:34:58 UTC
From: drake@oasys.dt.navy.mil
Message-ID: <32ae12INN2n9@oasys.dt.navy.mil>
Source record: 116867
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,cdnswc.scicomp

My 13 year old just loves to build stuff and take stuff apart, mostly
electronics. His current project is to make one of those toy guns where
each player has a receiver (target) and a "ray gun" infrared transmitter.
He really has had no training at all, and since I'm a mechanical engineer
I'm virtually no good to him at this point. He got one of those "electronic
engineers notebook" from radio shack with a simple circuit. It calls
for a transistor they didn't have in stock and an op amp. He built
it without those and lo-and-behold it sorta works anyway, but the receiver
is sensitive to the kitchen light too. Also range is just about 2 feet
(without the magnifying glass lens shown in the book). Anyway by 10:00
last night he was pretty discouraged about the whole thing and the idea
hit me that there might be some help available through the net. Now,
he is only 13 with no formal electronics training, virtually no money
and is interested in making things that actually DO something. Like
the robot made from an old RC car with LEDs and photocels and stuff.
And the model rocket launcher that you can aim because he hooked up
an old cassette deck to an erector set turntable, myriad different burgular
alrm systems for his bedroom, ad infinitum. As far as my ability to
help with time, energy, money, brains (if any) and such, I have 3 other
kids equally demanding in their interests and gifts. So I need help.
Anyone have some advice? Sources of simple gadget circuits? Cheap
IR gun circuits/hardware? Even old stuff for him to take apart that
might be reusable in projects (preferably low voltage stuff says Dad)?
Pleas respond by email if possible since I don't get to read news much
and have crossposted to several newsgroups.

Thanks for reading through this rather lengthy request.

John Drake

2176. Re: Question about power supply for HTX-202.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 13:11:10 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug10.131110.15014@ke4zv.atl.ga.us>
Source record: 116723
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <znr776465957k@crl> drice@crl.com (Dennis Rice) writes:
>I just bought (or am in the process of buying) a power supply for my
>HTX-202. However the power supply is 13.8VDC and 3A. I know the 202
>works fine at ~13.5VDC and 2A (car battery). Will the slightly higher
>voltage and amperage cause a problem? If it is a problem, I should
>just be able to add a resistor in series to get the amperage down,
>correct?

The nominal voltage of a fully charged car battery is 13.8 volts. That's why most fixed supplies put out that voltage. In a car, the charging system can increase that voltage to 14.5 volts, sometimes even 16 volts, so the radio has to be able to work with that if it can be run off the car. All you care about as far as supply current rating is concerned is if it can put out *enough* current. The radio will only draw as much as it needs, so a bigger supply is not a problem.

This is a basic Ohm's Law problem. Model the circuit like this:

```
----------------
+| |
Bat 13.8V Radio 6.9 ohms
-|_____________|
```

Assume the radio is a resistor (it's the load), and that if the radio normally needs 2 amps at 13.8 volts, it has a resistance value of 6.9 ohms. Now it doesn't matter how much current the 13.8 volt supply is *capable* of producing, at 13.8 volts it can only push 2 amps through a 6.9 ohm resistor. I=E/R or 13.8/6.9=2 amps. The only way the supply can push more than 2 amps through the radio is if the supply *voltage* is increased, or the radio resistance is somehow decreased (it can do that by outputting more RF or AF power). Let's assume a auto charging system voltage of 14.5 volts. Now how many amps will be pushed through the radio? The answer will tell you why higher voltage batteries allow HTs to transmit more power. (Remember P=I*E)

Now obviously solid state devices have an upper voltage limit, and exceeding that limit will destroy the device via voltage breakdown and current avalanche. So you never want to use a supply that has a higher voltage than the equipment is rated for. However, most equipment has a built in *safety* margin of about 20%, so you can *usually* apply a voltage of about 16.5 volts to a 13.8 volt rated radio without destroying it. A few tenths of a volt difference from rated voltage should never be a problem.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2177. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 13:29:58 UTC
From: al@atd.rochester.ny.us
Message-ID: <1994Aug10.132958.5539@atd.rochester.ny.us>
Source record: 116753

In article <BW0S8xE.vimx@delphi.com> vimx <vimx@delphi.com> writes:
> I was thinking about how many distinct voices might be possible in a 5 KHz
>channel. It seems to me as if you could put four voices on a single channel.
>That is , USB , USB quadrature , LSB , and LSB quadrature. And it seems as if
>you could build a special receiver to select which one.
> It also seems to me that it might be possible to squeeze a third phase into
>each sideband (like the color signal in a TV does with R,G,B). And also you
>might be able to put an AM signal and Quadrature AM signal on top of that.
>Since the AM appears in both sidebands, you could extract it kinda like how
>stereo L and R are separated in FM radio. A matrix or something. So now we
>have 8 stations on the same frequency and I think it's possible to separate
>them so that you only hear one. (on an ordinary receiver you'd hear them all).
>Is this correct? Maybe I havent thought of all the ways you can squeeze them
>together. What then is the limit?

TV color is done by a combination of amplitude and phase modulation.
AM carries the saturation. PM carries the hue. There are two
channels there.

FM stereo is time division multiplexed.

Single sideband can be thought of as simultaneous AM (sidebands in
phase) and FM (sidebands out of phase). If you have a phasing rig,
drive one modulator and unbalance it, you get AM. Drive one modulator
and unbalance the other you get FM.

The technique you propose suggests the old 4-channel audio techniques
like SQ and QS. You get a big 3 db channel separation.

2178. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 14:34:35 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug10.143435.15898@ke4zv.atl.ga.us>
Source record: 116727
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <327afl$j85@marconi.jpl.nasa.gov> cyamamot@marconi.jpl.nasa.gov (Clifford Yamamoto) writes:
>Greetings!
>
>Does anyone remember an old Radio Electronics or Popular Electronics
>article that allowed one to use the colorburst subcarrier of any TV
>station for use as a frequency reference. I remember reading that only
>network stations (CBS, ABC & NBC) have their colorburst traceable to
>NIST, but still it's a good stable source for a reference.

Not any more. Most, if not all, TV stations now receive their network feeds via satellite and use frame synchronizers to reclock the network signal to their local sync generator (usually only crystal controlled). So even when the station is relaying network programming, the color burst is only referenced to the crystal oscillator in the station. That only has to be within 10 Hz of nominal to be legal.

Satellite transmission also introduces it's own doppler errors that are +/- a few Hz, so even if you can use a TVRO to pick up the network signal directly, you still won't have a stable reference source. And, of course, the networks themselves have abandoned the atomic clocks they once used as references, so the original signal too is only referenced to a crystal oscillator, often not even in an oven.

In the old days, network feeds were over fixed telco paths, no doppler, and used atomic references in NY. Local stations used them as primary references and genlocked their own local sync generators to the incoming network signal. But that's long gone. Today, the networks switch their feeds from uplink source to uplink source during breaks, and that would cause local commercials to tear up from loss of reference, so no station genlocks to network anymore. Instead we use our frame synchronizers to effectively lock network to *us*.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

2179. Re: Handheld and Saltwater...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 15:15:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <10AUG199410155715@pavo.concordia.ca>
Source record: 116718

In article <paulf.776460428@abercrombie.Stanford.EDU>, paulf@abercrombie.Stanford.EDU (Paul Flaherty) writes...
>One technique that works is to immerse the radio in distilled water as soon
>as possible after the saltwater exposure, for about five minutes, then let it
>dry out.
>
>-=Paul Flaherty, N9FZX | "We are meant to be masters of destiny,
>->paulf@Stanford.EDU | not victims of fate." -- Ronald W. Reagan

Perhaps, but *DON"T* do that if the radio has just been 'dunked' because you run the risk of getting water into place that probably didn't get water in them from the 'dunking'.

Remember, that soaking and cleaning a radio like this is always a last-ditch effort as in "its garbage anyway, whatever I do next won't hurt"

73, VE2HVW

2180. IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 16:14:42 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <32audi$iq7@dawn.mmm.com>
Source record: 116726
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
Here's the problem it has a whole series of Japanese transistors (too many
to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
be obtained from.
Thanks.
--

2181. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 16:48:16 UTC
From: rkarlqu@scd.hp.com
Message-ID: <32b0cg$frg@hpscit.sc.hp.com>
Source record: 116719

In article <BW0S8xE.vimx@delphi.com>, vimx <vimx@delphi.com> wrote:
> I was thinking about how many distinct voices might be possible in a 5 KHz
>channel. It seems to me as if you could put four voices on a single channel.
>That is , USB , USB quadrature , LSB , and LSB quadrature. And it seems as if
>you could build a special receiver to select which one.

No. There are only two "dimensions" associated with a carrier.
You can do USB and LSB independently. You can do DSB in phase and
DSB in quadrature. You can do AM and PM independently. But if you try
to do more than 2 signals, they will interfere. For example, USB "quadrature"
is meaningless because carrier phase is not important in SSB.
In fact you don't even need to get the *frequency* of the carrier
right on for SSB.

To get more than 2 independent signals to occupy the same channel, you
would have to go to digital techniques.

Rick N6RK
rkarlqu@scd.hp.com

2182. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 17:02:20 UTC
From: steve@hi.com
Message-ID: <steve-100894130256@brainiac.hi.com>
Source record: 116733

The NEC Archive FTP site is located at ftp.netcom.com in /pub/rander/NEC

Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

2183. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 17:29:28 UTC
From: lihan@huey.cc.utexas.edu
Message-ID: <32b2po$g6t@huey.cc.utexas.edu>
Source record: 116732
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Has anyone else pointed out that the colorburst is only constant-phase
in alternate sync intervals? They do this to make the striations of
the color subcarrier less noticeable on B/W sets (those in decent
focus, anyway ;-) and it would noticeably affect your freq reference
system anyway, even discounting the +- 10 Hz spec mentioned in an
earlier post, if not eliminated by some elaborate gating and inverting
scheme ..

just my $.02 ...

--
<BGB>
lihan@ccwf.cc.utexas.edu / for flames, please consult
(really Bruce Bostwick) / http://acheron.hell.org/~devnull/
from the great state of TEXAS / #include <big.smiley.h>

2184. Re: DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 17:31:30 UTC
From: forrerj@frl.orst.edu
Message-ID: <forrerj.39.0@frl.orst.edu>
Source record: 116720

In article <329jec$4ub@news.delphi.com> dwilkins@news.delphi.com (DWILKINS@DELPHI.COM) writes:
>Path: gaia.ucs.orst.edu!flop.ENGR.ORST.EDU!reuter.cse.ogi.edu!hp-cv!hp-pcd!sdd.hp.com!cs.utexas.edu!natinst.com!news.dell.com!swrinde!pipex!sunic!trane.uninett.no!eunet.no!nuug!EU.net!uunet!news.delphi.com!news.delphi.com!not-for-mail
>From: dwilkins@news.delphi.com (DWILKINS@DELPHI.COM)
>Newsgroups: rec.radio.amateur.homebrew
>Subject: Re: DSP for the HomeBrewer?? (part2)
>Date: 10 Aug 1994 04:01:16 -0000
>Organization: Delphi Internet Services Corporation
>Lines: 13
>Message-ID: <329jec$4ub@news.delphi.com>
>References: <ahall-0808941758330001@ruger-68.slip.uiuc.edu>
>NNTP-Posting-Host: news.delphi.com
>You might want to try the DSP Starters kit from TI. It is a small board
>based on the TMS320C26 DSP, with debugger and assembler included. There
>are some sample programs on the disk that implement a spectrum analyzer.
>
>For more info:
>TI DSP Hotline
>1-713-274-2320
>
>or FTP to ti.com go to /mirrors/tms320bbs and peruse.
>
>N-Joy
>ke4jqv
>dwilkins@delphi.com

Homebrewing a 100+ pin DSP would be a lot of fun - my first entry into DSP was to wire wrap the W9GR project in QST. I found that the DSP would run quite happily with 150ns 2764 EPROMS, but thats only a 40 pin package.

The TI DSK is quite a powerful engine - there also now are nice memory expansion daughter boards available.

Another alternative is to buy an $80 DSP-based PC sound card and use that for your DSP platform. The Cardinal Pro 16, Orchid Sondwave 32, and others use the ADSP2115. A really powerful DSP platform with a lot of free applications materials available. Just an example of its performance - a 1024 point FFT in under 3ms.

Once you start playing with these toys, one quickly realize that programming the DSP is just a fraction of the effort - integrating the DSP into any worthwhile application, i.e. using a host PC's resources - thats another story. Having a flexible DSP board

plugged into your PC's bus and having access to the interrupt/DMA hardware sure makes life easier and offers lots of possibilities.

My $0.02 for what its worth. Good luck with your project.

Johan
KC7WW

2185. SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 20:44:36 UTC
From: briane@goofy.iaccess.za
Message-ID: <32be7k$qq8@goofy.iaccess.za>
Source record: 116736
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Greetings to one and all,

Can somebody please tell me the formula for calculating SWR when given only
the forward and reflected power in watts.

i.e Bird Inline reads 15w forward and 6w reverse. SWR=?

E-mail to me or posted on this group would be nice.

Thanks in advance.

Cheerio,

Brian ZR5DTS Voice: ++27-31-7011201 (06:00-14:30 UTC)
Internet: briane@goofy.iaccess.za Fax: ++27-31-7090813
VHF Packet: ZR5DTS@ZR5GQ.NTL.ZAF ICBM's: 29:51:05 S 30:53:59 E
****
I am glad I don't know everything, that way life isn't boring - Brian Ellse 94
****

2186. Re: Freq standard from TV Colorburst subcar

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 20:54:46 UTC
From: rcmcc@bellcore.com
Message-ID: <CuC7FB.93G@walter.bellcore.com>
Source record: 116728

How stable are the handheld GPS receiver oscillators
when locked on to the GPS satellites? They're
getting down in price now that it's tempting.
The Trimble Scout even does grid locators with two more
characters than the traditional 6.

Ron McConnell, w2iol

2187. Re: Radio signalling under water?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 21:12:25 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1008941712250001@k4dii.ksc.nasa.gov>
Source record: 116722
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

In article <acooneyCu8Cqy.G2u@netcom.com>, acooney@netcom.com (Alan Cooney) wrote:
> I'm in need of advice and/or information on getting signals through
> to a submerged remote vehicle......I've considered using ultrasonics,

Alan-

There are systems used by divers for similar applications. They use ultrasonic sound as a "carrier", which is modulated as if it were a radio carrier.

I think the frequency is in the order of 100 KHz to 200 KHz. It seems that there is a trade-off involved in selection of a frequency. At lower frequencies, the ambient sea noises (waves, whales, et cetera), interfere. At higher frequencies, signal attenuation limits the range. There is a "window" between these, that is useable for communications.

I suggest you ask for information at a diver supply store. I believe there are at least two companies that make these systems. (My information is from about 15 years back, so please forgive my faulty memory!)

73, Fred, K4DII

2188. Re: New Life For Old FM Rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 21:31:14 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1008941731140001@k4dii.ksc.nasa.gov>
Source record: 116735
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <btobackCu2JAq.7s7@netcom.com>, btoback@netcom.com (Bruce Toback) wrote:
> Communication Specialists has an encoder that can be programmed with
> a 31-position switch.

Bruce & Greg-

Communications Specialists also has a model that includes the switch, as well as a case. It is the TE-64, which generates 32 CTCSS sub-audible tones, 19 burst tones, 8 touchtones and 5 test frequencies. It uses a 32 position switch, with a two-position switch that selects either the CTCSS tones or the others.

It costs more than twice what the DIP-switch model costs. Are you sure you wouldn't prefer one of the tiny units that fit inside the radio's case? The SS-32SMP is jumper-programmed, and quite small compared to the TE-64.

73, Fred, K4DII

2189. AGC: Audio vs. IF derived

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:02:39 UTC
From: zelle@cs.utexas.edu
Message-ID: <32bipv$pbq@thor.cs.utexas.edu>
Source record: 116864
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I build radioes strictly as a hobby, and have a question for the wisdom of the net. Most discussions of Automatic Gain Control for receivers state something to the effect that IF-derived AGC is generally considered better, but that audio-derived is "simpler". My understanding is that most commercial shortwave receivers use IF-derived. However, my experience with homebuilt sets leads me to prefer audio-derived (at least for reception of am).

My argument for audio-derived AGC is that it provides much more pleasing performance in the presence of carrier fades, especially in the case of a simple envelope detector. When the carrier fades in the IF-derived situation, reciever gain is cranked up to maintian the IF level, effectively increasing the volume of the overmodulated, distorted signal. This produces a very unpleasant "pumping" effect. I have noticed this in a number of commercial receivers. With audio derived AGC, however, the volume stays relatively constant resulting in a "smoothing" over the distortion. I suppose that sets with synchronous detection do not suffer as much, but I still notice this problem on my Sony 2010.

My question is, what is wrong with my argument? Obviously, there must be a compelling reason for IF-derived designs that I am missing. I am also interested in whether IF-derived AGC is necessary for synchronous detection (to stabilize the input to the phase detector) or whether audio-derived will work just as well (I want synchronous detection in my next homebrew set).

So what do y'all think. I say audio-derived wins hands down. What am I missing?

--John
--
*** John Zelle e-mail: zelle@cs.utexas.edu ***
*** Taylor Hall 2.124 motto : I'd rather write programs which ***
*** University of Texas write programs than waste my ***
*** Austin, TX 78712-1188 time writing programs ***

2190. Marconi

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:09:18 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <32bj6e$1gl@dawn.mmm.com>
Source record: 116740
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Is there a company called Canadian Marconi Company CMC ? A friend of mine has a set TD-5064 that he bought as junk. A telephone number and/or address would be appreciated.
--

2191. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:12:40 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1008941812400001@k4dii.ksc.nasa.gov>
Source record: 116730

In article <32b0cg$frg@hpscit.sc.hp.com>, rkarlqu@scd.hp.com (Richard Karlquist) wrote:
> To get more than 2 independent signals to occupy the same channel, you
> would have to go to digital techniques.

Rick-

It seems to me that in the case of USB plus LSB, you are actually using two separate communications channels. In other words, you define a double sideband channel bandwidth, and occupy it with two single sideband stations. Each station generates very little energy in the bandwidth occupied by the other station.

However, with the other schemes, you may transmit two channels of information, but not from two separate, independent sites. From separate sites, there would be no coherence between the two information channels, and interference would result. Therefore, only one station could realistically occupy the radio channel, even though it could transmit more than one information channel.

Along those lines, sub-carriers could be used to add additional information. Of course, this would increase bandwidth. The digital techniques you mentioned, would also increase bandwidth, although several stations could occupy a channel if they were either synchronized or using spread-spectrum techniques.

I think the "bottom line" is that only the USB plus LSB scheme actually permits more independent conversations in a given bandwidth. But, this is no different than using all the same sideband, and spacing at half the distance along the band. Quite often, I hear SSB conversations at 2 KHz intervals, which usually works OK. However, you will also hear stations only a few hundred Hz apart on crowded bands like 20 Meters. Although it isn't pleasant, you can usually understand what is being said, using your brain as a "filter"!

73, Fred, K4DII

2192. Re: HELP: Son needs advice on IR detector

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:20:00 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1008941820000001@k4dii.ksc.nasa.gov>
Source record: 116731
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,cdnswc.scicomp

In article <32ae12INN2n9@oasys.dt.navy.mil>, drake@oasys.dt.navy.mil (John Drake) wrote:
> ..... He built
> it without those and lo-and-behold it sorta works anyway, but the receiver
> is sensitive to the kitchen light too.

John-

If the kitchen light is incandescent, then it generates a lot of IR, and you can't do much about it. However, many IR detectors may also respond to visible light. If that is the case, you can make an improvement by using a red filter over the receiving device. That should do a fair job of eliminating light from flourescent lamps. You may find that range increases when you use the filter, since it improves the "signal-to-noise" ratio.

Another source of IR devices, might be from discarded TV sets that have a matching remote control.

73, Fred, K4DII

2193. regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:25:22 UTC
From: zelle@cs.utexas.edu
Message-ID: <32bk4i$pdf@thor.cs.utexas.edu>
Source record: 116865
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

A recent Popular Electronics article described a regenerative shortwave receiver using a dual-gate MOSFET for the RF oscillator. It is well-known that the regenerative approach significantly increases the Q of the resonant circuit. I was wondering, however, if the Q is sufficient to provide the selectivity needed on the international broadcast bands. Can such a receiver really separate relatively powerful signals spaced every 5 Khz? I would appreciate hearing from anyone who has tried such a circuit for shortwave reception. Is the selectivity as good or better than superhets using a simple ceramic filter?

As a side note, I am interested in building a small, portable, SW receiver, and the simplicity of this approach (filtering via a single tuned circuit) is quite appealing. Any other ideas regarding the building of a small, battery-efficient receiver would be appreciated.

--John
--
*** John Zelle e-mail: zelle@cs.utexas.edu ***
*** Taylor Hall 2.124 motto : I'd rather write programs which ***
*** University of Texas write programs than waste my ***
*** Austin, TX 78712-1188 time writing programs ***

2194. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 22:51:58 UTC
From: rander@netcom.com
Message-ID: <randerCuCCuM.BsM@netcom.com>
Source record: 116725

jcheah@hns.com (Jonathon Cheah) writes:

>Dear Sirs,

>I heard that that there is a wealth of knowledge on NEC simulation software here in the HAM world. Can someone point me to a ftp site where I can download Fortran source code for NEC, and any other things I can do to get up to speed on NEC....

>Thank you,

> jcheah@hns.com

You can find what you are looking for at the following location:

ftp.netcom.com

/pub/rander/NEC

73's,
Ray WB6TPU
rander@netcom.com
raymonda@uranium.ebay.sun.com

2195. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-10 23:48:53 UTC
From: rkarlqu@scd.hp.com
Message-ID: <32bp15$873@hpscit.sc.hp.com>
Source record: 116743

In article <fred-mckenzie-1008941812400001@k4dii.ksc.nasa.gov>,
Fred McKenzie <fred-mckenzie@ksc.nasa.gov> wrote:
>
>Rick-
>
>It seems to me that in the case of USB plus LSB, you are actually using
>two separate communications channels. In other words, you define a double
>sideband channel bandwidth, and occupy it with two single sideband
>stations. Each station generates very little energy in the bandwidth
>occupied by the other station.
>
>However, with the other schemes, you may transmit two channels of
>information, but not from two separate, independent sites. From separate
>sites, there would be no coherence between the two information channels,
>73, Fred, K4DII

You're absolutely right, Fred. Thanks for clarifying that.

Rick

2196. Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 00:18:22 UTC
From: wmoyes@eis.calstate.edu
Message-ID: <32bqoe$ur@eis.calstate.edu>
Source record: 116721
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

I need information for a homebrew GPS (Global Positioning System). Books, magazines, references, and internet resources would be extremely helpful. I need information on theory, frequencies and modulation, and circuit schematics. Although I would prefer to build my own, any information about commercially available units would be helpful (specifications, sources, and prices), however I will need to hook the output of the device into other equipment. I am also seeking good information on how to set up an experiential differential GPS system.

-William Moyes
wmoyes@eis.calstate.edu
(KC6ARO)

2197. 6 Meter Antenna Ideas Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 02:38:53 UTC
From: mmjjmm@post.its.mcw.edu
Message-ID: <32c2vt$j99@post.its.mcw.edu>
Source record: 116729

I would like to build a 6 Meter antenna for a new rig. Would like ideas on both FM and SSB.

--
Michael J. Malloy Amateur Radio N9WJV
Medical College of Wisconsin Compuserve 70334,3563
Milwaukee, Wisconsin Internet mmjjmm@post.its.mcw.edu

2198. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 02:48:06 UTC
From: kohjin@marina.prug.or.jp
Message-ID: <CuCns6.H8A@marina.prug.or.jp>
Source record: 116741

```
Try ftp.ucsd.edu;

hamradio/nec:
total 1088
-r--r--r-- 1 root 488191 Feb 29 1992 nec2.in.c.tar.Z
-r--r--r-- 1 root 294119 Jan 31 1992 nec-2.f
-r--r--r-- 1 root 2534 Jan 31 1992 nec-2.doc
-r--r--r-- 1 root 4932 Jan 28 1992 nec.note
-r--r--r-- 1 root 294131 Jan 28 1992 nec-2.f.image

Good luck, Kohjin

--
*----/----* Kohjin Yamada, JR1EDE [kohjin@marina.prug.or.jp]
Q-----T------H 504-55 Shimo-Yamaguchi, Hayama, Miura, Kanagawa, Japan
*------/|-------* Phone:+81-468-75-6750 Fax/Modem/Voice:+81-468-76-1176
```

2199. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 03:22:26 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <32c5hi$mtg@ohlone.kn.PacBell.COM>
Source record: 116724
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Regenerative receivers never had and never will have selectivity as good as the superheterodyne receivers. That's why the superhet became so popular. And now most good receivers are double conversion, so they're even better. No matter how high the Q, a single tuned circuit can't have as sharp skirts as several stages of IFs. And then we haven't even talked about ceramic IF filters.

--

```
=====================================================================
| John Lundgren - Elec Tech - Info Tech Svcs | Standard |
| Rancho Santiago Community College District | disclaim- |
| 17th St. at Bristol \ Santa Ana, CA 92706 | ers apply.|
| jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu | |
=====================================================================
```

2200. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 06:38:04 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <32ch0c$mou@chnews.intel.com>
Source record: 116737
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32c5hi$mtg@ohlone.kn.pacbell.com>,
John Lundgren <jlundgre@news.kn.PacBell.COM> wrote:
>No matter how high the Q, a single tuned circuit can't
>have as sharp skirts as several stages of IFs.
>| John Lundgren - Elec Tech - Info Tech Svcs | Standard |

Hi John, I use a direct conversion receiver whose local oscillator is a DDS circuit controlled by my PC. The audio output goes to my sound-board for DSP-type processing. The biggest problem is images but the PC lock-steps the DDS circuit to minimize the problem. I (blush) use this system for CW only and it works pretty well.

In a super-regen circuit, the skirt selectivity problem can be overcome by using DSP techniques on the audio. However, I don't know any easy way to avoid the image problem. Does anybody else?

73, Cecil, KG7BK, OOTC (Not speaking for Intel)

--
Intel, Corp.
5000 W. Chandler Blvd.
Chandler, AZ 85226

2201. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 08:17:49 UTC
From: drew@trl.oz.au
Message-ID: <drew.162.0@trl.oz.au>
Source record: 116742
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32bk4i$pdf@thor.cs.utexas.edu> zelle@cs.utexas.edu (John Marvin Zelle) writes:
>From: zelle@cs.utexas.edu (John Marvin Zelle)
>Subject: regenerative sets and selectivity
>Date: 10 Aug 1994 17:25:22 -0500
>
>A recent Popular Electronics article described a regenerative
>shortwave receiver using a dual-gate MOSFET for the RF oscillator. It
>is well-known that the regenerative approach significantly increases
>the Q of the resonant circuit. I was wondering, however, if the Q is
>sufficient to provide the selectivity needed on the international
>broadcast bands. Can such a receiver really separate relatively
>powerful signals spaced every 5 Khz? I would appreciate hearing from
>anyone who has tried such a circuit for shortwave reception. Is the
>selectivity as good or better than superhets using a simple ceramic
>filter?
>

>--John
>--
>*** John Zelle e-mail: zelle@cs.utexas.edu ***
>*** Taylor Hall 2.124 motto : I'd rather write programs which ***
>*** University of Texas write programs than waste my ***
>*** Austin, TX 78712-1188 time writing programs ***

John, from my experience of building regenerative sets, you can obtain quite acceptable AM selectivity for SW BC work. The trick is to adjust the regeneration to the point where the set "takes off", (you will hear a gentle "plop") then back it off again slightly so that the detector just stops oscillating. The better sets have an RF amplifier to isolate the regenerative detector from the antenna (which can cause "dead spots, and maybe radiate an interfering signal).

For SSB and CW reception, the detector is deliberatly put into the oscillating condition, where once again, selectivity is quite adequate for most conditions. SSB and CW signals sound remarkably clean by the way (a bit like seeing the sky on a clear night away from the pollution of the city-- signals stand out with a remarkable clarity because there's no mushiness caused by multiple tuned circuits, AGC loops etc).

73, Drew, VK3XU. Telecom Australia Research Laboratories

2202. Re: HELP: Son needs advice on IR detector

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 09:56:21 UTC
From: vdbergen@aix1.uottawa.ca
Message-ID: <32csk5$13d@csi0.csi.UOttawa.CA>
Source record: 116734
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,cdnswc.scicomp

Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
: In article <32ae12INN2n9@oasys.dt.navy.mil>, drake@oasys.dt.navy.mil (John
: Drake) wrote:
: > ..... He built
: > it without those and lo-and-behold it sorta works anyway, but the receiver
: > is sensitive to the kitchen light too.

If you are looking for IR parts you should get a copy of the

ELECTRONIC GOLDMINE Catalog #222
P.O. Box 5408
Scottsdale AZ 85251
Tel.: (602) 451-7454
Fax: (602) 451-9495

They sell digital heartrate kits ($4.50) with an IR sensor
you can play with (two items page 5), IR target kits ($12.45), and
phasor gun kit ($8.70) page 41.

2203. Re: NEC simulation software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 12:23:44 UTC
From: peter_simpson@3com.com
Message-ID: <3042@bridge2.NSD.3Com.COM>
Source record: 116759

In article 15158@hns.com, jcheah@hns.com (Jonathon Cheah) writes:
>Dear Sirs,
>
>I heard that that there is a wealth of knowledge on NEC simulation software here in the HAM world. Can someone point me to a ftp site where I can download Fortran source code for NEC, and any other things I can do to get up to speed on NEC....

Try:
ftp.ucsd.edu:/hamradio/nec

Peter Simpson, KA1AXY Peter_Simpson@3com.com
3Com Corporation (508) 836-1719 voice
Northborough, MA 01532 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

2204. Re: SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 13:38:55 UTC
From: jcmonier@saclay.cea.fr
Message-ID: <32d9lf$3vh@anemone.saclay.cea.fr>
Source record: 116738

```
In article qq8@goofy.iaccess.za, briane@goofy.iaccess.za (Brian Ellse) writes:
-->
-->Greetings to one and all,
-->
-->Can somebody please tell me the formula for calculating SWR when given only
-->the forward and reflected power in watts.
-->
--> i.e Bird Inline reads 15w forward and 6w reverse. SWR=?
-->
-->E-mail to me or posted on this group would be nice.
-->
-->Thanks in advance.
-->
-->Cheerio,
-->
-->Brian ZR5DTS Voice: ++27-31-7011201 (06:00-14:30 UTC)
-->Internet: briane@goofy.iaccess.za Fax: ++27-31-7090813
-->VHF Packet: ZR5DTS@ZR5GQ.NTL.ZAF ICBM's: 29:51:05 S 30:53:59 E
--> ************************************************************************
-->I am glad I don't know everything, that way life isn't boring - Brian Ellse 94
--> ************************************************************************

Brian,

SWR = ( Forward + Reverse ) / ( Forward - Reverse )

With Forward = 15 W and Reverse = 6 W , SWR = 2.33 / 2

Hope this help you (and some others OM)

73+51

---

___ _____
.'/,-Y" "~-.
l.Y ^. DON'T USE DRUGS BUT... USE CONDOMS :-)
/\ _\_
i ___/" "\
| /" "\ o !
l ] o !__./ MONIER Jean-Christophe
\ _ _ \.___./ "~\ E-Mail : jcmonier@muguet.saclay.cea.fr
X \/ \ ___./ MS-Mail: monier@ulysse.cea.fr
( \ ___. _..--~~~" ~`-.
` Z,-- / \ ATHESA France
\__. ( / ______) Agence C.E.A. - Defense
\ l /------~~" / BP 28
```

Y \ / 91192 GIF SUR YVETTE
| "x_____.^ Fax : (1) 69.08.87.55
| \ Tel : (1) 69.08.56.41
j Y

2205. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 14:03:41 UTC
From: f_speerjr@ccsvax.sfasu.edu
Message-ID: <1994Aug11.080341.1@ccsvax.sfasu.edu>
Source record: 116739
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32c5hi$mtg@ohlone.kn.PacBell.COM>, jlundgre@news.kn.PacBell.COM (John Lundgren) writes:
> Regenerative receivers never had and never will have selectivity as good
> as the superheterodyne receivers. That's why the superhet became so
> popular. And now most good receivers are double conversion, so they're
> even better. No matter how high the Q, a single tuned circuit can't
> have as sharp skirts as several stages of IFs. And then we haven't even
> talked about ceramic IF filters.
>
> --
> ==
> | John Lundgren - Elec Tech - Info Tech Svcs | Standard |
> | Rancho Santiago Community College District | disclaim- |
> | 17th St. at Bristol \ Santa Ana, CA 92706 | ers apply.|
> | jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu | |
> ==
>
Gosh! That would have been news to me back in the 60's, when I added a "Q-Multiplier" (a regenerative IF stage) to my not-so-hot single conversion superhet and VASTLY improved selectivity.

My problems with regen rx's were always that they were insensitive, unstable, and a damned nuisence, not that there were too broad.
--
If RST>519 Jim Speer, K5YUT
Then cut_power; f_speerjr@ccsvax.sfasu.edu

2206. Re: DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 14:16:24 UTC
From: chrise@comtrol.com
Message-ID: <CuDJnF.4s@comtrol.com>
Source record: 116752

In article <329jec$4ub@news.delphi.com>,
DWILKINS@DELPHI.COM <dwilkins@news.delphi.com> wrote:
>You might want to try the DSP Starters kit from TI. It is a small board
>based on the TMS320C26 DSP, with debugger and assembler included. There
>are some sample programs on the disk that implement a spectrum analyzer.
>

Aren't there two flavors of this board... one based on the 'C26 and another
on the 'C56 or something ? Is the 'C56 one just a newer version of the
eval kit but you can still get the 'C26 one ? Seems alot of the codes
for amateur applications are for the 'C26 model...

If I order one according to the ad in say, EE Times-- which model will I
get ?

Chris

--
Chris Elmquist, N0JCF voice: (612)631-7614
chrise@comtrol.com fax: (612)631-8117

2207. Electronic suppliers wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 16:19:21 UTC
From: cmarsh@calvin.stemnet.nf.ca
Message-ID: <32dj29$aj5@coranto.ucs.mun.ca>
Source record: 116745

I am looking for phone numbers of major electronics suppliers such as
National Semiconductors, Electrosonic, Active Electronics, Canadian
preferably (so I don't have to pay the poor US-CDN exchange rate).

E-mail me at cmarsh@calvin.stemnet.nf.ca.
--
_____________ Charles Marsh, a.k.a VO1VZ
[-] |- == =======::| Email: cmarsh@calvin.stemnet.nf.ca
_|_ |: + + + (): + :|
__/ ~~~~~~~~~~~~~~~ "I'd rather be HAMming around!"

2208. Re: SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 16:35:36 UTC
From: tomb@lsid.hp.com
Message-ID: <CuDq3D.GAG@hpcvsnz.cv.hp.com>
Source record: 116749
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Brian Ellse (briane@goofy.iaccess.za) wrote:

: Greetings to one and all,

: Can somebody please tell me the formula for calculating SWR when given only
: the forward and reflected power in watts.

: i.e Bird Inline reads 15w forward and 6w reverse. SWR=?

SWR is defined as the ratio of maximum voltage along the line divided by
minimum voltage along the line, when the line is excited with a
constant amplitude single frequency.

The voltage at any point on a line is the sum of the instantaneous
voltage in the forward wave plus the instantaneous voltage in the
reverse wave. The rms voltage in each wave is given by

Vrms = sqrt(pwr*|Zo|) = sqrt(pwr) * sqrt(|Zo|)

The maximum voltage is where the forward and reverse add, and the
minimum voltage is where they try to cancel, so

SWR = (sqrt(fwdpwr) + sqrt(rvrspwr)) / (sqrt(fwdpwr) - sqrt(rvrspwr))

(The sqrt(|Zo|) terms cancelled out between numerator and denominator.)

It's useful to draw a graph of SWR versus reverse/fwd power and tape it
to the back of the Bird. It's not too hard to put the above formula
into a spreadsheet and use it to draw the graph for you. The square root
causes some interesting effects: the reverse/fwd power ratio to get to
1.05:1 SWR, for example, is about .0006 -- pretty hard to read accurately!
The example above, 6w reverse and 15 fwd, is about 4.44:1 SWR.

2209. Temperature Telemetry

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 17:23:03 UTC
From: oflber02@uctvax.uct.ac.za
Message-ID: <1994Aug11.192303.1@uctvax.uct.ac.za>
Source record: 116757

I am currently doing a thesis on a Perishable Goods Temperature Monitor.
The thesis calls for a temperature probe which is packed with the goods.
An interrogator then interrogates the probe and a reading is given.
The problem is that the probe is not allowed to have a power source at all.
The interrogator is hand-held and is powered by a battery. An option is
to have a rechargeable set up.
The probe must be as light as possible and as small as possible.
The system must be able to read temperatures between 233K and 313K
with an accuracy of 0.5K
I have thought about using a telemetry system or a transponder.
I have thought about using magnetic, acoustic, RF or microwave coupling
but I do not think I will be able to get enough power from a meter away
to power a IC like the LM35.
The interrogator must be able to receive the temperature from a meter away.
The only thing I have thought of that might work is an oscillating circuit.
The oscillation frequency changes with temperature.
A dip meter is then used as the interrogator.
The only problem is that the only thing I can think of that will vary with
temperature is a bimetallic strip.
The strip can then be used to change the capacitance of the oscillating
circuit.
However I need a circuit for a dip meter which can constantly scan the
frequency range and be able to differentiate the dips so that the required
accuracy is obtained.
Any help or ideas and suggestions are needed and very welcome.
Please send mail to
oflber02@Uctvax.uct.ac.za
Thanks in advance
Bernard O'Flynn
Dept. of Electrical Engineering
University of Cape Town

2210. Re: SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 17:40:41 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <32dnqp$j23@tekadm1.cse.tek.com>
Source record: 116751

jcmonier@saclay.cea.fr (Jean-Christophe MONIER):

:In article qq8@goofy.iaccess.za, briane@goofy.iaccess.za (Brian Ellse) writes:
-->. . .
-->Can somebody please tell me the formula for calculating SWR when given only
-->the forward and reflected power in watts.
-->
--> i.e Bird Inline reads 15w forward and 6w reverse. SWR=?
-->. . .

:Brian,

: SWR = (Forward + Reverse) / (Forward - Reverse)

: With Forward = 15 W and Reverse = 6 W , SWR = 2.33 / 2

Yikes. This isn't correct when dealing with powers. (It is correct for
forward and reverse voltages.) For powers,

SWR = (sqrt(Pf) + sqrt(Pr)) / (sqrt(Pf) - sqrt(Pr))

where Pf and Pr are forward and reverse power, respectively. 15 watts
forward and 6 reverse is an SWR of 4.44.

Roy Lewallen, W7EL
roy.lewallen@tek.com

2211. Re: SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 17:57:47 UTC
From: tomb@lsid.hp.com
Message-ID: <CuDtwB.HGo@hpcvsnz.cv.hp.com>
Source record: 116755

Jean-Christophe MONIER (jcmonier@saclay.cea.fr) wrote:
:
: SWR = (Forward + Reverse) / (Forward - Reverse)

True, for voltages or currents; not for power. Need to
take the square root of power to get a number proportional
to voltage.

: With Forward = 15 W and Reverse = 6 W , SWR = 2.33 / 2

Would be 2.33:1 without square root; it's more like 4.44:1.

2212. Re: 6 Meter Antenna Ideas Wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 17:57:54 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.776627874@melpar>
Source record: 116756

mmjjmm@post.its.mcw.edu (Michael Malloy) writes:

>I would like to build a 6 Meter antenna for a new rig. Would like ideas on
>both FM and SSB.

See the August, 1979 issue of QST for an ultra-cheap, 2-element
6-meter quad. Easy to build, works great, and I got a number of nice letters
from other hams who liked it as well (I wrote the article). The title of
the article is "The Carpenter's Delight."

If you don't have access to older QSTs, I'll send you a photocopy of
the article.

Paul, K4MSG

P.S. I used it on SSB, but you could turn the feed 90 degrees and use it
on FM (vertical polarization).

2213. Re: SWR calculation needed....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 20:23:38 UTC
From: jra@lawdept.daytonOH.ncr.com
Message-ID: <jra.229.000F6546@lawdept.daytonOH.ncr.com>
Source record: 116744
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <CuDq3D.GAG@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>From: tomb@lsid.hp.com (Tom Bruhns)
>Subject: Re: SWR calculation needed....
>Date: Thu, 11 Aug 1994 16:35:36 GMT

>Brian Ellse (briane@goofy.iaccess.za) wrote:

>: Greetings to one and all,

>: Can somebody please tell me the formula for calculating SWR when given only
>: the forward and reflected power in watts.

>: i.e Bird Inline reads 15w forward and 6w reverse. SWR=?

[derivation of the formula deleted, resulting in:]
> SWR = (sqrt(fwdpwr) + sqrt(rvrspwr)) / (sqrt(fwdpwr) - sqrt(rvrspwr))

>(The sqrt(|Zo|) terms cancelled out between numerator and denominator.)

>It's useful to draw a graph of SWR versus reverse/fwd power and tape it
>to the back of the Bird. It's not too hard to put the above formula
>into a spreadsheet and use it to draw the graph for you. The square root
>causes some interesting effects: the reverse/fwd power ratio to get to
>1.05:1 SWR, for example, is about .0006 -- pretty hard to read accurately!
>The example above, 6w reverse and 15 fwd, is about 4.44:1 SWR.

An awfully handy fact in the real world is that 10% reflected power (ie, 10
watts forward and 1 watt reflected) equals 2:1 SWR (well, actually, 1.93:1).
Since many of us figure that a SWR of 2:1 or less is a reasonable match (at
least in most cases), checking for <10% reflected power is a simple go/no-go
antenna system test.

John AG9V
jra@lawdept.daytonOH.ncr.com

2214. 220 Kits For Sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 20:57:25 UTC
From: lewiz@netcom.com
Message-ID: <lewizCuE27p.4su@netcom.com>
Source record: 116746

Hello everyone,
I have two completed Hamtronics kits for sale. They are both for the
220 MHz band, and were assembled neatly, stuffed in a seamless aluminum
box and routed with bypass capacitors through the case. They work, too!

220 MHz Receiver (xtal controlled), with 220 Helical Resonator Preamp Kit.

220 MHz Transmitter (exciter, xtal), with excellent output filtering.

These were used for my 220 Remote until the lower portion of the band
got taken away by the FCC. These are quality kits, with a lot of filtering
and parts. Please make a reasonable offer and have your own remote/repeater!
73's ,
Lew (KA6RBJ)

2215. Re: Real-time audio proc. with Sound Blaster

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 21:43:39 UTC
From: mcovingt@aisun3.ai.uga.edu
Message-ID: <32e62b$ar6@hobbes.cc.uga.edu>
Source record: 116758
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Steven L. Work (slwork@netcom.com) wrote:
: Does anyone know how you configure a Sound Blaster 16 (with an "ASP") to
: do real-time processing of audio signals. What I mean is taking audio
: input from its a/d, manipulating it, and presenting the output on its d/a
: converter immediately. It seems to me that they have designed the
: hardware to be able to do this, but I can't find anything in their
: documentation or on the Creative BBS which describes how to do this.

: By real-time, I mean processing of audio on the fly WITHOUT saving it to
: disk. Examples of such processing would be lead vocal cancellation
: (channel subtraction), surround-sound, and adding echoes.

Do let me know what you find out. I've added rec.radio.amateur.homebrew
to the newsgroups line because lots of hams have a need for real-time
removal of fixed-pitch noise (like 5 kHz whine from adjacent shortwave
stations, or random, but fixed, pitch from nearby CW stations).

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
> "To 'see through' all things is the same as not to see them." - C. S. Lewis <

2216. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 21:50:58 UTC
From: mjsilva@ted.win.net
Message-ID: <486@ted.win.net>
Source record: 116750
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <1994Aug11.080341.1@ccsvax.sfasu.edu>, James Speer (f_speerjr@ccsvax.sfasu.edu) writes:
>In article <32c5hi$mtg@ohlone.kn.PacBell.COM>, jlundgre@news.kn.PacBell.COM (John Lundgren) writes:
>> Regenerative receivers never had and never will have selectivity as good
>> as the superheterodyne receivers. That's why the superhet became so
>> popular. And now most good receivers are double conversion, so they're
>> even better. No matter how high the Q, a single tuned circuit can't
>> have as sharp skirts as several stages of IFs. And then we haven't even
>> talked about ceramic IF filters.
>>
>>
>Gosh! That would have been news to me back in the 60's, when I added a
>"Q-Multiplier" (a regenerative IF stage) to my not-so-hot single conversion
>superhet and VASTLY improved selectivity.
>
>My problems with regen rx's were always that they were insensitive, unstable,
>and a damned nuisence, not that there were too broad.

Yes, at 455kHz, but what happens at 15MHz?
>--
>If RST>519 Jim Speer, K5YUT
> Then cut_power; f_speerjr@ccsvax.sfasu.edu
>
I actually heard somebody give a 119 last week. Maybe he had code dyslexia and meant 449? (or even worse, 669?)

Mike, KK6GM

2217. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 21:55:00 UTC
From: Jeffrey Yuan <yuan@phoenix.princeton.edu>
Message-ID: <1994Aug11.215500.20026@Princeton.EDU>
Source record: 116669

In article <9408100130.AA12423@leo.nmc.edu> David Brodbeck,
ai351@leo.nmc.EDU writes:
>
>
>I need a TCM3105 chip. This is a 16-pin 1200 bps half-duplex modem chip
>made by Texas Instruments. I need it to build the Poor Man's Packet
>interface. Does anyone know where this is available in single
quantities?
>
>
>--
>-=-
>ai351@leo.nmc.edu David Brodbeck
> Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
>-=-

Try JDR Microdevices. I do not have their phone number off hand but they
advertise in Byte and Electronics Now. Last time I looked, they were
selling the TCM3105 for ~$5.00.

Jeffrey Yuan, N2NXC

yuan@phoenix.princeton.edu

2218. Re: Marconi

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-11 23:00:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <11AUG199418003532@pavo.concordia.ca>
Source record: 116754
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32bj6e$1gl@dawn.mmm.com>, tahir@tcdsp1.mmm.com ("Tahir Kayani") writes...
>Is there a company called Canadian Marconi Company CMC ? A friend of mine
>has a set TD-5064 that he bought as junk. A telephone number and/or address
>would be appreciated.
>--
>
Candian Marconi Head office (514) 341-7630.
Marine equip. & mobile radios (514) 341-5078

de VE2HVW

2219. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 01:57:34 UTC
From: t.grimwood@auckland.ac.nz
Message-ID: <t.grimwood-1208941357340001@130.216.90.102>
Source record: 116747

In article <CuABoH.Buz@synoptics.com>, jkaidor@synoptics.com wrote:

> **** I seem to remember reading somewhere that none of the stations
are transmitting
> highly accurate subcarriers anymore, now that they have digital frame
synchronization
> hardware. Can anybody confirm or deny?
>

They still are down here in ZL, and I'd be interested in any
references to tech. articles on deriving a frequency standard
from them.

73 de Tony, ZL1TTG

--
Tony Grimwood
ZL1TTG
School of Music
University of Auckland
Auckland
New Zealand GMT +12h

2220. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 02:07:28 UTC
From: wieland@me.udel.edu
Message-ID: <32elh0$1hc@news.udel.edu>
Source record: 116748

>From: zelle@cs.utexas.edu (John Marvin Zelle)
>Subject: regenerative sets and selectivity
>Date: 10 Aug 1994 17:25:22 -0500
>
>A recent Popular Electronics article described a regenerative
>shortwave receiver using a dual-gate MOSFET for the RF oscillator. It
>is well-known that the regenerative approach significantly increases
>the Q of the resonant circuit. I was wondering, however, if the Q is
>sufficient to provide the selectivity needed on the international
>broadcast bands. Can such a receiver really separate relatively
>powerful signals spaced every 5 Khz? I would appreciate hearing from
>anyone who has tried such a circuit for shortwave reception. Is the
>selectivity as good or better than superhets using a simple ceramic
>filter?
>
>--John

My experience with regens goes back a few decades to the late fifties, when my uncle coached me through the assembly of a regen using a single type 76 tube. I spent my high-school years listening to a Knight Kit Ocean Hopper, and I currently have a 3-tube Heathkit I picked up at the GoodWill. So I'll say I'm experienced with "jennies".

First, with jennies, everything gets worse as you go up in frequency. With your RF tuned circuit giving you all your selectivity, the "bandwidth" is a constant *percentage* of your center frequency, and the absolute bandwidth (in Hertz, say) increases in direct proportion with your operating frequency. Additionally, your problems with hand capacitance, antenna loading, drift, and "touchiness" of tuning all go up with frequency. My experience agrees with the ham magazines of the 1930's: jennies are great at 4 MHz, good at 7 mHz, only fair at 14 MHz, and poor on 29 MHz.

But this also means things get better with decreasing frequency. On the broadcast band, a jennie can be tuned to "cut the sidebands", and give mushy audio; you actually have to back off the regen control to let the sidebands through. At 455 KHz, regenerative Q-multipliers gave IF strips responses like narrow band (CW) crystal filters.

But that is mostly for CW work. The weakness of a jennie that always got me on bands crowded with AM signals was that the machine would produce perfect (interfering) audio from strong stations on nearby frequencies. A jennie, necessarily, is an envelope detector, so any AM that gets past the tuning circuit is

detected perfectly into AF, no matter what its frequency. So any signal that was really strong would show up in the audio even after the "Q-multiplied" tuning circuit was finished attenuating it. And some of these signals can be *really* strong. In the early sixties, I used to get Radio Moscow on 41 meters on a crystal set... but crystal sets are another story. Needless to say, on the jennie, Radio Moscow blanketed most of the 40 & 41 meter bands!

Jennies are still fun. They still the hold the record for the most performance from the fewest components, and they need no alignment or calibration; that's why they persisted as the dominant homebuilt through the hard-time 1930's. But today components are cheaper, and performance expectations are higher. For AM work on SW, I believe a direct-conversion (DC) receiver with some AF filtering would be the simplest receiver that might satisfy you. Look around in the magazines, now that a balanced mixer comes on a chip, very usable DC receiver projects have been published, you can even buy a ready-made circuit board. No, these are not SOTA, but they're not toys, either. A superhet would be better still, and for AM, a ceramic filter would be a big plus.

But me, I have been wanting to build another jennie for the 150-190 KHz "experimenter's" band. It will have all the sensitivity I need, and atmospheric noise down there is so bad that the few milliwatts of QRM radiated by a jennie will be unnoticable. Jennies are at their best when relatively tightly coupled to antennas that are electrically short (a small fraction of a wavelength); other receiver input stages need to be rather loosely coupled, preferably to resonant (reactanceless) antennas. Well, on this band, all practical antennas are electrically short... a potential problem for any receiver but a jennie.

2221. Re: Question about power supply for HTX-202.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 06:48:42 UTC
From: steve@vigra.com
Message-ID: <STEVE.94Aug11234842@susie.vigra.com>
Source record: 116762
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

-=> On Wed, 10 Aug 1994 13:11:10 GMT, gary@ke4zv.atl.ga.us (Gary Coffman) said:

> This is a basic Ohm's Law problem. Model the circuit like this:

```
> ----------------
> +| |
> Bat 13.8V Radio 6.9 ohms
> -|_____________|
```

> Assume the radio is a resistor (it's the load), and that if the radio
> normally needs 2 amps at 13.8 volts, it has a resistance value of 6.9
> ohms. Now it doesn't matter how much current the 13.8 volt supply is
> *capable* of producing, at 13.8 volts it can only push 2 amps through
> a 6.9 ohm resistor. I=E/R or 13.8/6.9=2 amps. The only way the supply
> can push more than 2 amps through the radio is if the supply *voltage*
> is increased, or the radio resistance is somehow decreased (it can do
> that by outputting more RF or AF power).

This is interesting. When I got my Yaesu FT-530, I made some crude measurements of the power consumption and found that it never draws more than 1.1 amps on 2m (slightly less on 440) . If you apply 6 volts, it draws the least. Then it draws gradually more current as you turn up the supply voltage, until it gets to about 10.5 volts. It draws 1.1A at 10.5V, and stays that way up to 16V (the max rated voltage). I didn't go higher, since it's my pride and joy. :-)

The receive portion is even more constant. When sitting idle on both bands with no power saving enabled, it draws around 100 mA. It does this at *any* voltage level (6-16). It seems to be a constant-current load for idle standby. Of course, incoming audio, loud volume settings, LED backlighting, and other stuff turns up the current draw.

I realize your resistor model was only an approximation, but I was surprised to see that it controls its current so consistently over the voltage range. I could have measured it wrong, but that's what it looked like.

Happy Hacking!
-Steve

Steve Haehnichen Vigra, Inc. San Diego, CA
steve@vigra.com (619) 597-7080 x116 Fax: (619) 597-7094

2222. Re: Phase shifters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 10:15:04 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994Aug12.101504.19187@ucl.ac.uk>
Source record: 116763

In article 776381171snz@arkas.demon.co.uk, Michael@arkas.demon.co.uk (Michael J Dower) writes:
> Who knows of a circuit that will do this?
>
> [==============]
> [Variable]
> -------->[Phase]------->
> Input signal [Shifter] Output signal with phase P2
> with phase P1 [==============] linearly dependent upon input
> I phase P1 and control variable C.
> I
> I
> Control ^
> Variable C, e.g. volts, current, (via digital word value!?!) etc.
>
> This has to operate at RF, i.e. somewhere above 30 MHz, and preferrably
> somewhere in the 60 to 100 MHz range. It would be nice to have a wideband
> circuit, but I suspect that it will be narrow band, and this will do.
>
> Circuit design needs to be repeatable, i.e. if I build (or get built) say 8 or
> so, then I should be able to get the same results out of each one for the given
> input conditions. Some set-up tuning is ok.
>
> Linear dependence of P2 on P1 and C can be non-linear: so long as it's
> predictable and not wildly non-linear!
>
> Preferred phase shift range is > +/- 90 degrees, but will settle for less if
> that's all there is.
>
> Why do I want this? For an active HF phased array antenna design which
> requires phase shifting as one means of achieving beam-forming.
>
> 73's and TIA
>
> VK2ENG in G-land.
>
> --
> Michael J Dower
> 'Quoth the raven, "Never more".' ... Poe

Thre are a number of ways of doing what you want. See for example Handbook of microwave and optical components, volume 2 - microwave solid-state components, edited by Kai Change, pages 230 - 262. Two methods might work.

1) Design a low-pass pi filter, 2 C's and an L. make the C's varicap (varactor) diodes. As the capacitace is changed, so will the phase shift.

2) Take a hybrid coupler. Terminate one port with a varactor.

I've just purchased a phase shifter to work at 82MHz. Gives 0-360 degree phase shift, with a control voltage of 0-15 V. Quite linear. Available from R&K, but I could give you the UK distributor if you want. Trouble is its a professioanl bit of kit and was about ₧500. Not really amateur prices. This uses 3 hybrid couplers as explained in (2), to get a full 360 degree phase shift.

Sorry, just read you want it for an antenna. If you want to transmitt, then you may run into problems with power for both of these routes.

How about doing it with sections of 50 Ohm line, one say 1 degree, 2 degree, 4 degree, 8 degree ... 64 degrees electrical length. By switch in one or more sectionss, you can get from 1 to 127 degrees of phase shift. Use pin diodes to switch the lines.

Good luck,

davek

2223. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 12:34:41 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <32fq91$866@ohlone.kn.PacBell.COM>
Source record: 116760
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tahir Kayani (tahir@tcdsp1.mmm.com) wrote:
: Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
: Here's the problem it has a whole series of Japanese transistors (too many
: to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
: be obtained from.
: Thanks.
: --

Jeez, what happened? A stray lightning bolt hit the antenna? What you need to do is get several cross references and start to compare all the substitute transistors to see what will work. THen see what cheapies will do the job.

Someone left a post about the Japanese transistor numbering system. It went something like:

2SA = PNP Hi Freq
2SB = PNP Lo Freq
2SC = NPN Hi Freq
2SD = NP Low Freq

I've never seen this confirmed or heard it mentioned much, so it may not be valid. And where is the crossover between hi and lo freq? 30MHz? If so, almost every low power silicon transistor made today could be called hi freq.

If that many semi's have failed, I would hate to think of how many other parts may have bit the dust.

--

John Lundgren - Elec Tech - Info Tech Svcs	Standard
Rancho Santiago Community College District	disclaim-
17th St. at Bristol \ Santa Ana, CA 92706	ers apply.
jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu	

2224. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 13:59:15 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <32fv7j$hhu@dawn.mmm.com>
Source record: 116767
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

```
--
In article <32fq91$866@ohlone.kn.PacBell.COM>, jlundgre@news.kn.PacBell.COM (John
Lundgren) writes:
|>
|> Tahir Kayani (tahir@tcdsp1.mmm.com) wrote:
|> : Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
|> : Here's the problem it has a whole series of Japanese transistors (too many
|> : to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
|> : be obtained from.
|> : Thanks.
|> : --
|>
|> Jeez, what happened? A stray lightning bolt hit the antenna? What you
|> need to do is get several cross references and start to compare all the
|> substitute transistors to see what will work. THen see what cheapies
|> will do the job.
|>
|> Someone left a post about the Japanese transistor numbering system. It
|> went something like:
|>
|> 2SA = PNP Hi Freq
|> 2SB = PNP Lo Freq
|> 2SC = NPN Hi Freq
|> 2SD = NP Low Freq
|>
|> I've never seen this confirmed or heard it mentioned much, so it may not
|> be valid. And where is the crossover between hi and lo freq? 30MHz?
|> If so, almost every low power silicon transistor made today could be
|> called hi freq.
|>
|> If that many semi's have failed, I would hate to think of how many other
|> parts may have bit the dust.
|>
|> --

By the looks of it, it appears to have sat in some water. There is considerable
damage. There are some parts that I can't even identify. I wish to thank everyone
who responded. MCM seems to have most of what I can identify.
```

2225. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 14:29:26 UTC
From: anto@gate.net
Message-ID: <32g106$ijc@tequesta.gate.net>
Source record: 116761
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tahir Kayani (tahir@tcdsp1.mmm.com) wrote:
: Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
: Here's the problem it has a whole series of Japanese transistors (too many
: to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
: be obtained from.
: Thanks.
: --

I believe there's a place in California called Dalbani Electronics
that sells Japanese transistors and/or replacements. They have a
catalog but I don't have a number for them handy. If you still need
help, send me email, I'll try to get a number for you.

Nigel

2226. Re: Freq standard from TV Colorburst subcarrier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 16:40:10 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug12.164010.27543@ke4zv.atl.ga.us>
Source record: 116766
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <32b2po$g6t@huey.cc.utexas.edu> lihan@huey.cc.utexas.edu (Bruce G. Bostwick) writes:
>
>Has anyone else pointed out that the colorburst is only constant-phase
>in alternate sync intervals? They do this to make the striations of
>the color subcarrier less noticeable on B/W sets (those in decent
>focus, anyway ;-) and it would noticeably affect your freq reference
>system anyway, even discounting the +- 10 Hz spec mentioned in an
>earlier post, if not eliminated by some elaborate gating and inverting
>scheme ..

Burst reverses phase *when measured using H sync as the reference* on a field to field basis, but the burst retains constant phase if measured from burst to burst. IE it's the H sync position that changes from field to field by a half cycle of burst, not the burst phase itself. This was done to offset the color information so that solid hue areas average field to field. IE it's to reduce color flicker on color sets, not to reduce artifacts on B&W sets. They generally don't have the bandwidth to reproduce hue information anyway.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2227. Re: Freq standard from TV Colorburst subcar

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 16:44:13 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug12.164413.27764@ke4zv.atl.ga.us>
Source record: 116668

In article <CuC7FB.93G@walter.bellcore.com> rcmcc@bellcore.com writes:
>How stable are the handheld GPS receiver oscillators
>when locked on to the GPS satellites? They're
>getting down in price now that it's tempting.
>The Trimble Scout even does grid locators with two more
>characters than the traditional 6.

When they're locked to the atomic clocks on the satellites, they're
as stable as those clocks, minus the jitter introduced by SA. IE
about 0.00033%.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2228. Re: HELP: Son needs advice on IR detector

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 17:01:31 UTC
From: JAY@medicine.dmed.iupui.edu
Message-ID: <JAY.41.2E4BAAEB@medicine.dmed.iupui.edu>
Source record: 116675
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,cdnswc.scicomp

Radio Shack sells an IR detector that works with TV/stereo remote controls. I works with modulated IR beams at 38-40 Khz. This would solve the kitchen lite problem. You IR sender needs to modulate the beam at 38-40Khz. When you use the RS IR detector, it will return +5 if it sees it 0 if it doesn't.

Jay
KA9OKT

2229. Re: Radio signalling under water?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 18:33:23 UTC
From: jyoungberg@draper.com
Message-ID: <jyoungberg.9.000D8ED3@draper.com>
Source record: 116765
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

In article <fred-mckenzie-1008941712250001@k4dii.ksc.nasa.gov> fred-mckenzie@ksc.nasa.gov (Fred McKenzie) writes:
>From: fred-mckenzie@ksc.nasa.gov (Fred McKenzie)
>Subject: Re: Radio signalling under water?
>Date: Wed, 10 Aug 1994 17:12:25 -0400

>In article <acooneyCu8Cqy.G2u@netcom.com>, acooney@netcom.com (Alan
>Cooney) wrote:
>> I'm in need of advice and/or information on getting signals through
>> to a submerged remote vehicle......I've considered using ultrasonics,

>Alan-

>There are systems used by divers for similar applications. They use
>ultrasonic sound as a "carrier", which is modulated as if it were a radio
>carrier.

>I think the frequency is in the order of 100 KHz to 200 KHz. It seems
>that there is a trade-off involved in selection of a frequency. At lower
>frequencies, the ambient sea noises (waves, whales, et cetera),
>interfere. At higher frequencies, signal attenuation limits the range.
>There is a "window" between these, that is useable for communications.

>I suggest you ask for information at a diver supply store. I believe
>there are at least two companies that make these systems. (My information
>is from about 15 years back, so please forgive my faulty memory!)

>73, Fred, K4DII

Coincidentally, I just ran into an article this morning in the library:

Coates, Dr Rodney, "Underwater Acoustic Communication," Sea Technology Magazine, July 1994, pp 41-47.

Excellent overview coverage, especially in things like relating range and frequency, power requirements, keying formats, and what's on the market. Readable, too.

73,
Skip, K1NKR

2230. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 18:54:00 UTC
From: maustin@hollywood.cinenet.net
Message-ID: <32ggg8$hsh@hollywood.cinenet.net>
Source record: 116764
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

William A Moyes (wmoyes@eis.calstate.edu) wrote:
: I need information for a homebrew GPS (Global Positioning
: System). Books, magazines, references, and internet resources
: would be extremely helpful. I need information on theory,
: frequencies and modulation, and circuit schematics. Although I
: would prefer to build my own, any information about commercially
: available units would be helpful (specifications, sources, and
: prices), however I will need to hook the output of the device
: into other equipment. I am also seeking good information on how
: to set up an experiential differential GPS system.

I had an idea. How about linking up a GPS with a cellular phone and
a large battery to power both for a couple of days. Then dial a number
on the cellular where you want the GPS to send it's location info and
drop the whole bundle into someone's car. Since GPS info can be used
with several very cheap street mapping systems (Delorme for one) you'll
be able to sit at home and watch them driving down the street on
your home computer. Should be able to do this cheap. A couple of
hundred dollars (with cheap GPS and cheap phone). I have no ideas
on keeping cellular costs down though. One thought would be to set
the phone to answer and power up the whole gizmo and then shut down
after a call is placed into it. You wouldn't get a continuous
signal but you'd be able to find where someone is on demand (if they're
within cellular calling range). Such a setup could last for a LONG
time with the proper battery.

2231. UHF/VHF Remote VSWR Sensor Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 20:27:37 UTC
From: smith@alk1.rmc.ca
Message-ID: <32glvp$8m2@cs6.rmc.ca>
Source record: 116670

[No readable article body recovered]

2232. RCI 2950 AND ITS CW NOTE?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 21:26:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.1051.2645@aquila.com>
Source record: 116684

HI Joe, Hey thanks for responding to my message.
Well this Fellow is only about 1 mile away, and His CW Note from his
RCI-2950 is really rough I gave him a 596 it was more like a 5(595)
Tone-5 Filtered rectified a.c. but strongly ripple-modulated.
Tone-6 Filtered tone, definite trace of ripple modulation.
I dont think it had any thing to do with propagation. 73's de AL

* RM 1.3 00559 *

2233. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 23:22:03 UTC
From: paulbreed@aol.com
Message-ID: <32h06r$8f5@search01.news.aol.com>
Source record: 116678

In article <32ggg8$hsh@hollywood.cinenet.net>,
maustin@hollywood.cinenet.net (Mark Austin) writes:

>I had an idea. How about linking up a GPS with a cellular phone and
>a large battery to power both for a couple of days. Then dial a number
>on the cellular where you want the GPS to send it's location info and
>drop the whole bundle into someone's car. Since GPS info can be used
>with several very cheap street mapping systems (Delorme for one) you'll
>be able to sit at home and watch them driving down the street on
>your home computer. Should be able to do this cheap. A couple of
>hundred dollars (with cheap GPS and cheap phone). I have no ideas
>on keeping cellular costs down though. One thought would be to set
>the phone to answer and power up the whole gizmo and then shut down
>after a call is placed into it. You wouldn't get a continuous
>signal but you'd be able to find where someone is on demand (if they're
>within cellular calling range). Such a setup could last for a LONG
>time with the proper battery.

I did exactly this with a LORANC reciever and Cell phone in LA in 1984.
A small embedded micro sampled the position every 30sec and stored the
information. On demand you called the Cell Phone and it downloaded the
list
of past positions and times. It also tracked things like engine
starts/stops
doors opening etc... It was a prototype for a Truck Tracking System for
Shorthaul
delivertrucks.

Paul Breed

2234. VHF SWR/Watt meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 23:27:04 UTC
From: jacques.choquette@takeone.com
Message-ID: <940813042118647@takeone.com>
Source record: 116674

I've started building J-poles and am interested in constructing other but the meter I'm using is borrowed. That meter (an RS model) is dicontinued. Tried 4 stores in US and they don't know why. The others are too expensive and from some other messages saw some but require one to also read power. Could any one of you gentlemen send along palns to build one?
The small parts I can get so building is no problem. appreciate any input to a new ham. Thank you. Jacques VE3TSC

2235. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-12 23:50:28 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CuG4w5.20x@utnetw.utoledo.edu>
Source record: 116671
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32audi$iq7@dawn.mmm.com>, tahir@tcdsp1.mmm.com ("Tahir Kayani") writes:
>Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
>Here's the problem it has a whole series of Japanese transistors (too many
>to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
>be obtained from.
>Thanks.
>--
>
You could try Icon direct. The phone number is 206-454-7619
And they are in Washington State. They still carry parts for an IC-505
so I would suppose they could help you out.

Patrick
KB8PYM

PS If you need the 2SC3133 it goes for about $18

2236. Re: Real-time audio proc. with Sound Blaster

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 00:52:01 UTC
From: sct@po.cwru.edu
Message-ID: <32h5fj$rkl@usenet.INS.CWRU.Edu>
Source record: 116673
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Steven L. Work (slwork@netcom.com) wrote:
: What I mean is taking audio input from its a/d, manipulating it, and
: presenting the output on its d/a converter immediately. It seems to
: me that they have designed the hardware to be able to do this, but I
: can't find anything in their documentation or on the Creative BBS
: which describes how to do this.

The IETF remote conferencing folks were griping about this a year or two ago. From what I've heard, the SoundBlaster design does not allow for simultaneous input and output.

Maybe this restriction has been lifted in one of the zillions of models of SoundBlasters, but if you don't see docs on it, I'd be doubtful that it's there. I suppose you could use two cards...

The SoundBlaster was originally designed to be a cheap multifunction sound card for games. Games don't do real-time signal processing.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the CYWS
European performance tour 1994

2237. UHF/VHF Remote VSWR Sensor Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 01:42:06 UTC
From: smith@d3.rmc.ca
Message-ID: <32h8de$bei@cs6.rmc.ca>
Source record: 116681

```
--
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+ Dr. Douglas R. Smith smith@rmc.ca +
+ Dept. of Electrical and Computer Eng (613) 541-6000 Ext 6656 +
+ Royal Military College +
+ KINGSTON, Ontario, CANADA +
+ K7K 5L0 +
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

2238. designing microwave circuits using aplac

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 02:08:36 UTC
From: klopfer@natinst.com
Message-ID: <32h9v4$4ts@eagle.natinst.com>
Source record: 116680

I'm wanting to design uhf and microwave circuits for packets radio. Since I've not done'designs at these frequencies I was wondering if some persons might answer a few questions. Is software like spice much use? Is its transistor model any good at >1GHz? What about the aplac simulator? I noticed it has lots of microstrip models? Is some kind of network analyzer required to do any real design or is there simulation software that is accurate enough and in what frequency ranges? What's the quickest cheapest way to fabricate a microstrip board? Can some toner transfer methods be used and what kind of circuit board material is best?

I bought a tv tuner
that's suppose to go up to 1700MHz but I couldn't get anything to show up on a 1GHz storage oscilliscope when I connecting the tuner to power. I would like to find the simplest circuit that can get it to work. I've also got a 2GHz prescaler and would like to eventually make a frequency generator from these parts.

2239. TNC construction article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 07:45:18 UTC
From: BSoranno@vax2.winona.msus.edu
Message-ID: <22449.BSoranno@vax2.winona.msus.edu>
Source record: 116672
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Does anybody know of a construction article for a "general purpose" TNC?

These are my reguirements:
1) Standard serial connection. (I have 4 different computers and would like to be able to connect to all).

2) An internal processor of some type to minimize the overhead on the computer.

If these are too strict, please let me know.
Thanks.

Bill Soranno -- KB0NKX
7 Fairfax
Winona, MN 55987
507/452-3789

2240. Re: Question about power supply for HTX-202.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 07:57:02 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug13.075702.732@ke4zv.atl.ga.us>
Source record: 116682
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In article <STEVE.94Aug11234842@susie.vigra.com> steve@vigra.com writes:
>-=> On Wed, 10 Aug 1994 13:11:10 GMT, gary@ke4zv.atl.ga.us (Gary Coffman) said:
>
>> This is a basic Ohm's Law problem. Model the circuit like this:
>
>> ----------------
>> +| |
>> Bat 13.8V Radio 6.9 ohms
>> -|_____________|
>
>> Assume the radio is a resistor (it's the load), and that if the radio
>> normally needs 2 amps at 13.8 volts, it has a resistance value of 6.9
>> ohms. Now it doesn't matter how much current the 13.8 volt supply is
>> *capable* of producing, at 13.8 volts it can only push 2 amps through
>> a 6.9 ohm resistor. I=E/R or 13.8/6.9=2 amps. The only way the supply
>> can push more than 2 amps through the radio is if the supply *voltage*
>> is increased, or the radio resistance is somehow decreased (it can do
>> that by outputting more RF or AF power).
>
>This is interesting. When I got my Yaesu FT-530, I made some crude
>measurements of the power consumption and found that it never draws
>more than 1.1 amps on 2m (slightly less on 440) . If you apply 6
>volts, it draws the least. Then it draws gradually more current as you
>turn up the supply voltage, until it gets to about 10.5 volts. It
>draws 1.1A at 10.5V, and stays that way up to 16V (the max rated
>voltage). I didn't go higher, since it's my pride and joy. :-)
>
>The receive portion is even more constant. When sitting idle on both
>bands with no power saving enabled, it draws around 100 mA. It does
>this at *any* voltage level (6-16). It seems to be a constant-current
>load for idle standby. Of course, incoming audio, loud volume
>settings, LED backlighting, and other stuff turns up the current draw.
>
>I realize your resistor model was only an approximation, but I was
>surprised to see that it controls its current so consistently over the
>voltage range. I could have measured it wrong, but that's what it
>looked like.

That's not surprising. Two things are at work here. First there is
almost certainly a voltage regulator circuit in the radio to feed
the digital components. It's pass element will act like a variable
resistor depending on the input voltage. That, when summed with the
load presented by the radio circuitry, will present a near constant

current load on the source.

The second factor is a bit more subtle. As the voltage rises, active devices come into their linear range and their quiescent current becomes determined primarily by the ratio of the bias elements. As long as drive is absent or constant, their current draw will remain nearly constant over a fairly large supply voltage excursion.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2241. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 08:25:14 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug13.082514.868@ke4zv.atl.ga.us>
Source record: 116676
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

In article <32ggg8$hsh@hollywood.cinenet.net> maustin@hollywood.cinenet.net (Mark Austin) writes:
>
>I had an idea. How about linking up a GPS with a cellular phone and
>a large battery to power both for a couple of days. Then dial a number
>on the cellular where you want the GPS to send it's location info and
>drop the whole bundle into someone's car. Since GPS info can be used
>with several very cheap street mapping systems (Delorme for one) you'll
>be able to sit at home and watch them driving down the street on
>your home computer. Should be able to do this cheap. A couple of
>hundred dollars (with cheap GPS and cheap phone). I have no ideas
>on keeping cellular costs down though. One thought would be to set
>the phone to answer and power up the whole gizmo and then shut down
>after a call is placed into it. You wouldn't get a continuous
>signal but you'd be able to find where someone is on demand (if they're
>within cellular calling range). Such a setup could last for a LONG
>time with the proper battery.

You aren't going to be able to get a GPS and cell phone for a couple hundred dollars. The cheapest GPS receivers are around $400, and so are cell phones unless you roll their cost into a long term service contract. And monthly and per minute cell phone charges will mount up fairly rapidly. By using packet radio, amateur or commercial, you can send position updates on a regular basis without incurring quite as much cost.

DeLorme Mapping and City Streets are a couple of commercial map systems that work with GPS. However, APRS (Automatic Packet Reporting System) is in some ways better. While it lacks the friendly user interface of the commercial products, and it's pre-made map databases are skimpy, you can make your own maps, and it works with local and remote GPS receivers (using packet UI frames for the latter). It also supports other information about the remote sites such as range and bearing data from DF equipment, and arbitary text messages.

However, what many of us want is *differential* GPS. The Coast Guard, FAA, and others send out position deltas from a fixed benchmark receiver that are received and used to correct the reading of the local GPS receiver. These transmissions are either at MF or VHF depending on the system. A special receiver is required, and either a GPS receiver designed to work with differential signals, or a PC that can take the timestamped position reports and reconcile them via software, is used to give a true position. This method removes the deliberate SA jitter, and other error sources such as varying atmospheric propagation factors,

from the position data. This allows much greater precision in determining location than raw GPS alone.

It would be nice if the APRS author would support this mode in his software. Some of us are willing to set up benchmark receivers on the amateur bands. That timestamped data could be used to correct the positions reported by the rover receivers over packet.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2242. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 12:46:16 UTC
From: hurta@mksol.dseg.ti.com
Message-ID: <1994Aug13.124616.2084@mksol.dseg.ti.com>
Source record: 116688
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Tahir Kayani (tahir@tcdsp1.mmm.com) wrote:
: Help! I picked up an IC-751A pretty (very) cheaply, hoping to repair it.
: Here's the problem it has a whole series of Japanese transistors (too many
: to list) 2SC..., 2SB..., 2SC and so forth. Any ideas as to where they might
: be obtained from.
: Thanks.
: --

Try "RF Parts"
435 South Pacific St.
San Marcos, Ca. 92069
1-800-RF-PARTS (orders only)/619-744-0700 (information)
619-744-0750 (technical info)

Good luck,
Dwaine

--
Dwaine Hurta Texas Instruments, Dallas, TX
hurta@lobby.ti.com 214-480-3291 voice 214-480-2214 fax

2243. Re: Phase shifters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 15:10:51 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776790651snz@arkas.demon.co.uk>
Source record: 116685

In article <1994Aug12.101504.19187@ucl.ac.uk>
davek@medphys.ucl.ac.uk "Dave Kirkby" writes:

[my previous deleted]
> Thre are a number of ways of doing what you want. See for example Handbook of
> microwave and optical components, volume 2 - microwave solid-state components,
> edited by Kai Change, pages 230 - 262. Two methods might work.
[snip]

Hi Dave. Sounds very interesting. I've actually built hybrid couplers before,
and hence this is possibly a means by which I could do it on the cheap. Do you
know where I can pick up the reference you mentioned above?

> I've just purchased a phase shifter to work at 82MHz. Gives 0-360 degree phase
> shift, with a control voltage of 0-15 V. Quite linear. Available from R&K, but
> I could give you the UK distributor if you want.
[snip]
Yes please! It's the sort of information that I sometimes need in my line of
work as well.

> Sorry, just read you want it for an antenna. If you want to transmitt, then you
> may run into problems with power for both of these routes.
> How about doing it with sections of 50 Ohm line, one say 1 degree, 2 degree, 4
> degree, 8 degree ... 64 degrees electrical length. By switch in one or more
> sections, you can get from 1 to 127 degrees of phase shift. Use pin diodes to
> switch the lines.

Well, you've provided me with 3 equally viable methods - thanks for your help.
What I'm thinking of is building a phased HF array ... not here, but back home
when I return there in ~10 months or so - I'll have the necessary space. I'm
thinking of running phase and amplitude conrolled signals to each of 8
elements, and hence I can steer the system electrically in azimuth.
Whether I do the mixing / power amplification before or after phase shifting
depends on the most easily realized method of phase shifting: hence, I'm still
in brain storming mode, and all suggestions are most welcome.

Best regards from VK2ENG.

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2244. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 15:19:58 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776791198snz@arkas.demon.co.uk>
Source record: 116686
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32c5hi$mtg@ohlone.kn.PacBell.COM>
jlundgre@news.kn.PacBell.COM "John Lundgren" writes:

> Regenerative receivers never had and never will have selectivity as good
> as the superheterodyne receivers. That's why the superhet became so
> popular. And now most good receivers are double conversion, so they're
> even better. No matter how high the Q, a single tuned circuit can't
> have as sharp skirts as several stages of IFs. And then we haven't even
> talked about ceramic IF filters.

Actually, that's something else I've been wondering about. Just how good are
ceramic IF filters these days, and what for centre frequencies are they
available (apart from 455 kHz)?

73's de VK2ENG (in G-land)

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2245. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 15:40:06 UTC
From: dgf@netcom.com
Message-ID: <dgfCuHCuv.DAt@netcom.com>
Source record: 116677

>distance along the band. Quite often, I hear SSB conversations at 2 KHz
>intervals, which usually works OK. However, you will also hear stations

Actually _more_ efficient than ISB (USB+LSB) because the lower freq cutoff
of most SSB transmitters is 300 Hz, leading to 600 Hz unoccupied on ISB;
if boxcar (sharp cutoff) filters were used everywhere, the upper 300 Hz
of bandwidth of one SSB signal could overlap the unoccupied bottom 300 Hz
of the next.

Dave

2246. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 16:12:13 UTC
From: gerry@cs.tamu.edu
Message-ID: <32irct$f3u@news.tamu.edu>
Source record: 116679
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

In article <1994Aug13.082514.868@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>In article <32ggg8$hsh@hollywood.cinenet.net> maustin@hollywood.cinenet.net (Mark Austin)
writes:
>>
>>I had an idea. How about linking up a GPS with a cellular phone and
>>...
>>signal but you'd be able to find where someone is on demand (if they're
>>within cellular calling range). Such a setup could last for a LONG
>>time with the proper battery.

Everyone should have an idea occasionally... :=)

Well, this is, unfortunately, not a new idea. The similar systems I'm already
familiar with sell for ~$2000, which tells me that they are costing about $1k
for hardware PLUS s/w and R&D.And don't have much markup.

>You aren't going to be able to get a GPS and cell phone for a couple
>hundred dollars. The cheapest GPS receivers are around $400, and so
>are cell phones unless you roll their cost into a long term service
>contract. And monthly and per minute cell phone charges will mount
>up fairly rapidly. By using packet radio, amateur or commercial,
>you can send position updates on a regular basis without incurring
>quite as much cost.

Actually, if you shop carefully, the DGPS without a fancy display costs $318.
Quantity 1. It's a Motorola VP Encore core modure, and it runs on 5 VDC
(regulated), puts out TTL levels, and can receive RTCM-104S differential
updates with Option B installed (for no cost, I might add!). Further, with
Option B, it will put out the differential correction data, acting as a
reference station, albeit in Motorols Proprietary Binary format. The
developers' manual has the full data format, making translation to the
standard format pretty straightforward.

The cellphone could be the hard part, from a cost perspective. I've not
looked into that, because there aren't too many cell sites near the ranch I'm
where I'm putting GPS's on cows.

>DeLorme Mapping and City Streets are a couple of commercial map
>systems that work with GPS. However, APRS (Automatic Packet Reporting
>System) is in some ways better. While it lacks the friendly user
>interface of the commercial products, and it's pre-made map databases
>are skimpy, you can make your own maps, and it works with local and
>remote GPS receivers (using packet UI frames for the latter). It also
>supports other information about the remote sites such as range and

>bearing data from DF equipment, and arbitary text messages.

Very true. In fact, it's seriously impressed the GIS institute here at Texas A&M (Nice Job, Bob!).

>However, what many of us want is *differential* GPS. The Coast Guard,
>FAA, and others send out position deltas from a fixed benchmark
>receiver that are received and used to correct the reading of the local
>GPS receiver. These transmissions are either at MF or VHF depending on
>the system. A special receiver is required, and either a GPS receiver
>designed to work with differential signals, or a PC that can take the
>timestamped position reports and reconcile them via software, is used
>to give a true position. This method removes the deliberate SA jitter,
>and other error sources such as varying atmospheric propagation factors,
>from the position data. This allows much greater precision in determining
>location than raw GPS alone.

Er. Ah. See above. Differential is getting easier and cheaper. A local ham club could go together, get a cheap GPS core, throw together an embedded PC clone for translation, and broadcast the results on packet. Now, if you want to get really fancy, use carrier-phase to get the roaming units a little smoother, AND incorporate DGPS.

>It would be nice if the APRS author would support this mode in his
>software. Some of us are willing to set up benchmark receivers on
>the amateur bands. That timestamped data could be used to correct
>the positions reported by the rover receivers over packet.

And, of course, if you want to, one can log DGPS corrections over a local area and post-process the logged fixes from the mobile units, to give DGPS corrected data. That's one of the standard methods used today. I don't personally think APRS is the appropriate place for DGPS post-processing corrections...

73, gerry
Gerry Creager N5JXS
gerry@cs.tamu.edu
****
Cows In Space: Bovine location services with sub-bovine accuracy.
--
Gerry Creager N5JXS * SAREX Co-Investigator
gerry@cs.tamu.edu * A little radio that lets kids talk
gcreager@gothamcity.jsc.nasa.gov * to astronauts, and smile
****

2247. toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 16:17:00 UTC
From: jim.salvino@woodybbs.com
Message-ID: <93.1530.7584.0NFB2DA4@woodybbs.com>
Source record: 116694

I am looking for a couple of 88mh toroids for a project I am
building - does anyone have an idea where I could locate
them??????? Thanks WB2CXZ Jim
---
* Origin: Radio FREQS' Latham, NY (518) 782-0507 (1:267/103)

2248. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 19:56:46 UTC
From: btoback@netcom.com
Message-ID: <btobackCuHoqM.89p@netcom.com>
Source record: 116683

In article <1994Aug10.132958.5539@atd.rochester.ny.us> al@atd.rochester.ny.us (Al Davis) writes:
>FM stereo is time division multiplexed.

?? I thought FM stereo was frequency-division multiplexed, with a 38 KHz subcarrier carrying an L-R signal added to the baseband L+R signal.

-- Bruce KN6MN

2249. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-13 20:20:11 UTC
From: btoback@netcom.com
Message-ID: <btobackCuHpto.A1G@netcom.com>
Source record: 116687
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

In article <32irct$f3u@news.tamu.edu> gerry@cs.tamu.edu (Gerald J Creager) writes:
>[Gary Coffman writes]:
>>You aren't going to be able to get a GPS and cell phone for a couple
>>hundred dollars. The cheapest GPS receivers are around $400, and so
>>are cell phones unless you roll their cost into a long term service
>>contract.
>
>Actually, if you shop carefully, the DGPS without a fancy display costs $318.
>Quantity 1. It's a Motorola VP Encore core modure, and it runs on 5 VDC
>(regulated), puts out TTL levels, and can receive RTCM-104S differential
>updates with Option B installed (for no cost, I might add!). Further, with
>Option B, it will put out the differential correction data, acting as a
>reference station, albeit in Motorols Proprietary Binary format. The
>developers' manual has the full data format, making translation to the
>standard format pretty straightforward.

Where can I get more information about this device and the developers'
manual? This sounds very interesting!
>
>The cellphone could be the hard part, from a cost perspective.

In California, various places are selling the bottom-of-the-line Motorola
portable cellphone for $100, with no activation required. (CA has a law
prohibiting anyone from requiring the purchase of cellular service with
a phone. However, you do get a VERY nasty look from the salesperson
when you say "No, I just want the phone.") It's almost getting to the
point where it's worth investigating what it would take to put one of
those phones on the 900 MHz ham band.

Incidentally, one of the earlier posters in this thread mentioned tracking
vehicles using the GPS/cellphone system. We had a demonstration here a
couple of months ago in which a ham put a GPS/APRS system in his wife's
car, and produced the resulting map for the local packet users group. The
map provided an every-two-minutes location for the car for an entire
day.

-- Bruce KN6MN

2250. Re: cell sites

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 02:09:49 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.776830119@atl1>
Source record: 116645
Cross-posted to:
sci.electronics,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.digital.misc

yctcsl@cerfnet.com writes:

>Does anyone have any info regarding the rate paid by PacBell (AirTouch) for
>establishing a cell site lease. The offers been made however I'd be interested to
>find out just what being paid these days.

I think a ham friend told me that his father was offered $700 per month
for a site on his property. I know it about paid the mortgage payment.
Good luck.

2251. faisyn20.zip - Electronic Filter Synthesis Program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 03:18:22 UTC
From: diviney@sky700.bwi.wec.com
Message-ID: <1994Aug14.031822.15107@tron.bwi.wec.com>
Source record: 116689
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
*****************************************************************
* *
* INTRODUCING 'FAISYN' FILTER SYNTHESIS PROGRAM FOR MSDOS *
* *
*****************************************************************
```

faisyn20.zip Electronic Filter Synthesis Program

FAISYN is a low cost, effective alternative to expensive commercial filter synthesis packages. The program has be used to design lumped element filters and diplexers from 10's of KHz to 1.5GHz and is the result of many years experience in filter design. Designers know that filter design is often an iterative process. Tedious number grinding is sometimes required to optimize a design. FAISYN eases the burden by allowing the designer to quickly synthesize a variety of circuits that can be simulated and compared using your favorite circuit simulator (FAISYN currently supports PSPICE-TM Microsim, MMICAD-TM Optotek and TOUCHSTONE-TM HP/EESOF circuit formats).

Special Requirements: None

Shareware.

Faisyn was developed by:

Kevin Faison
Carriage House Engineering
16 W. Pleasant Hill Rd.
Owings Mills, MD 21117

You can get FAISYN20.ZIP from one of the following sources:

1. I just posted a UUENCODED version (2-parts) to comp.binaries.ibm.pc

2. I have just uploaded the program to the SIMTEL collection. It should appear there, and on it's mirrors soon in /msdos/electric.

3. I tried to upload it to bode.ee.ualberta.ca, but for some reason it appears to be down today. Look for it there soon.

--


```
*****************************************************************
* Tom Diviney diviney@sky700.bwi.wec.com *
* Westinghouse Electric Corp. (410)765-6606 voice *
*****************************************************************
```

2252. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 04:14:49 UTC
From: Bill Soranno KB0NKX <BSoranno@vax2.winona.msus.edu>
Message-ID: <89593.BSoranno@vax2.winona.msus.edu>
Source record: 116690

Where can I get more information on the "Poor Man's Packet interface".
Does it have a standard serial port, or is it an internal board for a
particular computer?

Any info would be appreciated.

Bill Soranno -- KB0NKX
7 Fairfax
Winona, MN 55987
507/452-3789

2253. Re: Cheap 6M FM?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 05:06:01 UTC
From: robinsonhb@aol.com
Message-ID: <32k8np$389@search01.news.aol.com>
Source record: 116691

In article <2sm5oa$g5j@abyss.West.Sun.COM>, myers@spot.West.Sun.COM (Dana Myers) writes:

I would appreciate any additional info you could provide on the 6M conversion.

I also appreciate your comment on the abolition of the code tests (I am an RF enginneer with a Tech-Plus license). 73 N3GDE

2254. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 05:14:24 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <32k97g$n5f@ohlone.kn.PacBell.COM>
Source record: 116692
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Michael J Dower (Michael@arkas.demon.co.uk) wrote:
: In article <32c5hi$mtg@ohlone.kn.PacBell.COM>
: jlundgre@news.kn.PacBell.COM "John Lundgren" writes:

: > Regenerative receivers never had and never will have selectivity as good
: > as the superheterodyne receivers. That's why the superhet became so
: > popular. And now most good receivers are double conversion, so they're
: > even better. No matter how high the Q, a single tuned circuit can't
: > have as sharp skirts as several stages of IFs. And then we haven't even
: > talked about ceramic IF filters.

: Actually, that's something else I've been wondering about. Just how good are
: ceramic IF filters these days, and what for centre frequencies are they
: available (apart from 455 kHz)?
: 73's de VK2ENG (in G-land)
: Michael J Dower

10.7 MHz and 4.5 MHz (TV IF) should be readily available. I bought some
from Rat Shack several years ago, but they don't handle them any more. I
would guess just about any freq could be custom ordered, in quantity.

I've had some replies from regen receiver enthusiasts, seems like they
like 'em. But with the performance so good from relatively inexpensive
receivers nowadays, it would be hard to match them with a simple circuit,
no matter what it did. I ran across something recently in one of the
mags. It was a simple SW recvr using a NE602. I remember they were a hot
item when they first came out. Maybe a receiver using one would be
adequate and have acceptable performance.

--

John Lundgren - Elec Tech - Info Tech Svcs	Standard
Rancho Santiago Community College District	disclaim-
17th St. at Bristol \ Santa Ana, CA 92706	ers apply.
jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu	

2255. HTX-202 MOD ER2 HV BAT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 08:32:00 UTC
From: alan.lyday@aquila.com
Message-ID: <f.1060.2645@aquila.com>
Source record: 116696

>ER2 indicates a PLL unlock. The radio gives this error if the PLL
>alignment is off or if the transmitted signal interferes with the
>internal PLL frequency. This error has been reported most frequently
>when using the supplied "rubber ducky" antenna with either a
>high-power battery pack or with an external DC source.

>According to the memo, the fix for this is to use an external
>antenna when using external DC power.
>The memo goes on to say that if the problem persists,
>send the transceiver to the repair center.
> Marc Siegel N3MCR

Hello I found this mod in the HTX-202 mod file on a CD.
I had this same Problem using a 10v battery pack, But using the External
power Jack on the Top of the Radio and the "Rubber Duck" antenna
this problem never acured. What I found was that the Higher power resulting from
this pack was somehow getting into the Radio thru the battery terminals.
The best solution to fix this would be modifying the Radio, But for a
tempary fix since I only have one Higher voltage battery was to put a
.001 uf cap across the terminals and a ferite bead on the + lead inside
the battery. This solved the above Problem 100%
I hope this helps with anyone having this same problem. GL 73's de WC9C

* RM 1.3 00559 *

2256. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 12:18:18 UTC
From: mstrand@delphi.com
Message-ID: <5QyTM9i.mstrand@delphi.com>
Source record: 116693

Ben Slagle <aq760@yfn.ysu.edu> writes:

>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>like it to be in the area of 10 watts... nothing fancy, just a
>n amplifier I can make for cheap. Thanks.

Hi Ben,
If you can find an old tube type low band (40 - 50 mHz) two way radio,
Motorola, GE, etc, the final amp could easily be moved to 6m. These are
class C amps however if that will work for your application. Ham swap meets
are generally a good place to find these type radios.

Good luck!
Mike

2257. Re: Tube Receiver IF oscillates, Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 12:52:09 UTC
From: mstrand@delphi.com
Message-ID: <5S+RM3p.mstrand@delphi.com>
Source record: 116695

Ed Bathgate <ed@fore.com> writes:

>I started pulling tubes out and finally removed (I think) the 1st IF tube,
>a 12AX7A, the S meter went down. I swapped it with another 12AX7A (tx circuit)

Hi Ed,

Typically the IF amps are pentodes, 6CB6, 6AU6, etc. and the first place to look for oscillations is screen bypass caps (as other posters have mentioned). If the caps were shorted the IF gain would be very low....not the problem here. Try grounding each IF amp screen grid with a .01 @600v disc cap (careful! there is hi DC voltage here) and see if the oscilation is reduced or eliminated. If so replace the cap. Also, tubes can get gassy and cause all kinds of strange problems. The best bet for checking gas is replacing the tube with a known good one.

Good luck!
Mike

2258. Re: TNC construction article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 12:58:32 UTC
From: rapp@lmr.mv.com
Message-ID: <0VT2qc7w165w@lmr.mv.com>
Source record: 116697
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.misc

<BSoranno@vax2.winona.msus.edu> writes:

> Does anybody know of a construction article for a "general purpose" TNC?
>
> These are my reguirements:
> 1) Standard serial connection. (I have 4 different computers and would like
> to be able to connect to all).
>
> 2) An internal processor of some type to minimize the overhead on the
> computer.
>
> If these are too strict, please let me know.
> Thanks.
>
> Bill Soranno -- KB0NKX
> 7 Fairfax
> Winona, MN 55987
> 507/452-3789

All TNC's fit your bill pretty well. They all run off a serial port, and
contain a microcomputer to handle most of the overhead. MFJ, Kantronics,
Tiny TNC - all will do what you want.

Larry W1HJF

L. M. Rappaport & Associates, Inc. rapp@lmr.mv.com voice +1 603 237 8400
Colebrook, NH 03576-0158 CIS 72427,2567 fax +1 603 237 8430

2259. Re: Vacuum Tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 18:23:10 UTC
From: gregesp@aol.com
Message-ID: <32lnee$f14@search01.news.aol.com>
Source record: 116698

In article <93i4oc1w165w@valinor.mythical.com>, zogg@valinor.mythical.com (Jean Bulot) writes:

Do you have any 8950 Tubes? I need (4) of them for a Swan X-1200 Linear amplifier.

You can contact me at GregESP@aol.com

73's
Greg
Weremey

2260. Re: Tubes for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 18:27:02 UTC
From: gregesp@aol.com
Message-ID: <32lnlm$f2j@search01.news.aol.com>
Source record: 116699

In article <5AUG199413200443@vax2.concordia.ca>, hirschj@vax2.concordia.ca
(JACK HIRSCHBERG) writes:

Hi Jack,
Please let me know what you want for (4) 8950 tubes.
They need not be matched since they are run in parallel.

Thanks, 73's.

Greg Weremey
GregESP@aol.com

2261. Schematic needed Swan X-1200

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 18:58:04 UTC
From: gregesp@aol.com
Message-ID: <32lpfs$fg4@search01.news.aol.com>
Source record: 116700

Does anyone have a schematic for the Swan X-1200 linear amplifier?

Thanx

GregEsp@aol.com

2262. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 20:03:35 UTC
From: eaim084@email.mot.com
Message-ID: <eaim084-1408941503350001@fl08ara003.comm.mot.com>
Source record: 116545
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <32fv7j$hhu@dawn.mmm.com>, tahir@tcdsp1.mmm.com ("Tahir Kayani") wrote:

> By the looks of it, it appears to have sat in some water. There is considerable
> damage. There are some parts that I can't even identify.

A friend of mine had a similar experience with a HW-101 which was sitting in a garage in Florida for many years. It was full of dirt and cobwebs. He took all the tubes out and put it in a dishwasher and washed it then rinsed several times. After drying, he replaced all the tubes, cleaned the volume control, etc and the unit fired right up. Don't know if this will work for you, but it did for WB4ZZB.

Steve
still waiting to see if the FCC will renew my tag, WB4CZR

--
The opinion expressed above is so ridiculous that it had to have come from Steve and no one else.

2263. Modify an old cellphone to 902-928 MHz?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-14 20:33:06 UTC
From: cs684@cleveland.Freenet.Edu
Message-ID: <32lv23$oqq@usenet.INS.CWRU.Edu>
Source record: 116701

I found several old (1985) cell phone units that were designed to be mounted in the trunks of cars, similar to mobile radios. They were manufactured by Novatel Communications, LTD, in Korea, with an FCC ID of: BFC8J7VTR-2881. Power required is 13.6 volts and claimed output is 3 watts. Size is 11.5" x 10" x 2.75". Inside, the antenna feeds an 800 MHz duplexer which is connected to a power amplifier unit and a receiver unit. Both the power amplifier and receive units seem to connect to a frequency synthesizer (?) board. Underneath all of this is the logic\CPU board which has the ESN PROM, which, I guess, controls the frequencies, etc. The whole thing is built like a tank out of aluminum and all of the RF modules are entirely separate and shielded very well.

I would like to attempt to tune the boards to work at 902-928 MHz FM, and\or, using one of Down East Microwave's transverter units, drive the amplifier to 6 watts or so for 902.1 MHz SSB with 144 MHz as an IF. (Assuming it's linear!)

If anyone has info on a source of schematics, data, etc. or has attempted a similar project, I'd appreciate hearing about your results.

--Charlie WD5GNW, Spring, Texas USA [713] 288-4547

2264. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 00:54:02 UTC
From: zeus@myth.demon.co.uk
Message-ID: <776912042snz@myth.demon.co.uk>
Source record: 116703
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

In article <32bqoe$ur@eis.calstate.edu>
wmoyes@eis.calstate.edu "William A Moyes" writes:

> I need information for a homebrew GPS (Global Positioning
> System). Books, magazines, references, and internet resources
> would be extremely helpful. I need information on theory,
> frequencies and modulation, and circuit schematics.

Telephone GEC Plessey semiconductors on (408) 438 2900 and ask them about availability of the GP1010 and GP1020 ICs and GP1010 evaluation board. The GP1010 is a receiver on a chip (just add clock and sprinkle lightly with passives) the GP1020 is a correlator that decodes the spread spectrum signal. You will need to design and build your own interface to your development PC of whatever though.

As for information about signal structure etcetera, go to your library and look for anything by J.J.Spilker, issues of GPS world and (unlikely in the US) copies or Electronics World (UK publication) for about 18 months ago. If you can get the annual report from the Institute of Navigation (ION) so much the better. An excellent introduction to GPSs. As for GPS resources, well, there is a GPS UseNet group (can't recall off hand exactly what), but that is mainly uses of GPS and reviews/opinions of particular devices.

Mike.

--

Michael S. Cowgill (Mike) _ My opinions! MINEMINEALLMINEHAHAHAHA!
zeus@myth.demon.co.uk (That's me) _ " Swirly thing alert! "
G1VOX@GB7WRG.GBR.EU 44.131.2.76 _ " ...Cracking toast Gromit!... "

2265. Need wide-range VCO circuit for cheap receiver project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 01:31:57 UTC
From: vimx <vimx@delphi.com>
Message-ID: <B+-xMd9.vimx@delphi.com>
Source record: 116702

I would like to know if there is a circuit that has the range of a cable box VCO. It does not have to be stable (drift is ok). All the varactor tuner circuits ive seen have very narrow ranges. I am also thinking of building a spectrum analyzer with this VCO and a NE602. The PMSA is too expensive for me. And my application does not demand accuracy or even calibration.

2266. tubes for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 02:42:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <14AUG199421425641@vax2.concordia.ca>
Source record: 116704

Last week I posted a notice that I had come across a large supply of tubes. The response was rather overwhelming. In addition, the fellow who has the supply and is supposed to inventory them got the flu and has done no work on this.

Please be patient...I recorded all your messages and will get back to everyone as soon as I have anything to report.

--Jack

2267. Source for Mini Circuits Mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 04:18:02 UTC
From: guru314708@aol.com
Message-ID: <32mq9q$nf4@search01.news.aol.com>
Source record: 116705

Does anyone have a source for Mini Circuits 500-1000 Mhz.
Doubly or Singly Balanced mixers in small quantities???
If so reply via Email.

2268. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 04:36:42 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CuK7H6.6sr@utnetw.utoledo.edu>
Source record: 116708

In article <5QyTM9i.mstrand@delphi.com>, mstrand@delphi.com writes:
>Ben Slagle <aq760@yfn.ysu.edu> writes:
>
>>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>>like it to be in the area of 10 watts... nothing fancy, just a
>>n amplifier I can make for cheap. Thanks.
>
>Hi Ben,
>If you can find an old tube type low band (40 - 50 mHz) two way radio,
>Motorola, GE, etc, the final amp could easily be moved to 6m. These are
>class C amps however if that will work for your application. Ham swap meets
>are generally a good place to find these type radios.
>
>Good luck!
>Mike

If you wanted a 10w solid state amp, you could base it on the 2sc3133. ICOM uses it in an older 6m rig (IC-505) and the transistor is not too expensive. The ICOM rig is an all mode and with that transistor puts out about 10w from a 12V supply.

Patrick

2269. Re: DSP for the HomeBrewer?? (part2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 04:44:19 UTC
From: dwilkins@news.delphi.com
Message-ID: <32mrr3$f6u@news.delphi.com>
Source record: 116706

chrise@comtrol.com (Chris Elmquist) writes:

>In article <329jec$4ub@news.delphi.com>,
>DWILKINS@DELPHI.COM <dwilkins@news.delphi.com> wrote:
>>You might want to try the DSP Starters kit from TI. It is a small board
>>based on the TMS320C26 DSP, with debugger and assembler included. There
>>are some sample programs on the disk that implement a spectrum analyzer.
>>

>Aren't there two flavors of this board... one based on the 'C26 and another
>on the 'C56 or something ? Is the 'C56 one just a newer version of the
>eval kit but you can still get the 'C26 one ? Seems alot of the codes
>for amateur applications are for the 'C26 model...

>If I order one according to the ad in say, EE Times-- which model will I
>get ?

>Chris

>--
>Chris Elmquist, N0JCF voice: (612)631-7614
>chrise@comtrol.com fax: (612)631-8117
Chris,
I don't know of another board based on the 'C56(?). There is another
processor in the C2x family called the 25-50 (50 mhz). You can get
information and programs from ti.com in the directory /mirrors/tms320bbs.

I have ported the sample loader to linux, and am looking for source to an
assembler to use under linux. If you run across the source to an
assembler, drop me a mail.

The part number of the board that I have is TMDS3200026. I purchased
mine in December of '93. I just now have gotten the time to play with it
some, and it is fun.

N-Joy!
dhw

2270. Help! I need info on cheep telemetry methods.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 05:16:37 UTC
From: LOUXWE96%CS25@cadetmail.usafa.af.mil
Message-ID: <LOUXWE96%CS25.149@cadetmail.usafa.af.mil>
Source record: 116707

Hello,
I am a cadet at the US Air Force Acamemy and I am doing a project this semester where we will launch a hybrid rocket. I am in charge of getting telemetry from this experimental rocket. Being as it is a college project we can't afford expensive telemetry systems.

What I need to know is if there is a cheep way to make an alternative system to send and receive data from sensors(temp, pressure, velocity, g's etc., in a digital form(is there such a thing as digital sensors.)) and then putting the info into a pc for analysis.

Any info or a place to start would be greatly appreciated.

Thanks,
Bill

---
* Cadet William E. Loux | "I have never let my *
* P.O. Box 2835 | schooling interfere *
* United States Air Force Academy | with my education." *
* Email=> louxwe96%cs25@cadetmail.usafa.af.mil | -Mark Twain *
--------"All know the way; Few actually walk it." -Bohhidharma----------

2271. Re: toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 05:48:14 UTC
From: mjsilva@ted.win.net
Message-ID: <489@ted.win.net>
Source record: 116710

In article <93.1530.7584.0NFB2DA4@woodybbs.com>, Jim Salvino (jim.salvino@woodybbs.com) writes:
>I am looking for a couple of 88mh toroids for a project I am
>building - does anyone have an idea where I could locate
>them??????? Thanks WB2CXZ Jim

Don't see much call for these any more, with active filters so easy to do (quad low-noise op-amps are under a buck). I'm curious to know what you're trying to do.

73,
Mike, KK6GM

2272. newsletter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 05:54:23 UTC
From: ctaylor@lamar.ColoState.EDU
Message-ID: <9408150554.AA113936@lamar.ColoState.EDU>
Source record: 116709

Do you publish a homebrew newsletter for amateurs? If so how do i subscribe?If not is there someone who does?
Thank you
cytaylor@lamar.colostate.edu

2273. simple 7MHz power amp ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 08:42:13 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <32n9p5$suh@info2.rus.uni-stuttgart.de>
Source record: 116711

Hello,

I am interested in building a simple transistor power amp,
with 2W in and 50 or so watts out on 40m. I know that old
ARRL hand books used to have that. but I have no access to one.
Does anyone have a modern design, e.g. using a low cost MOSFET?

Thanks in advance, Moritz DL5UH
e-mail: deap1032@servus.rus.uni-stuttgart.de

2274. Mitsumi cdrom Interface.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 10:07:25 UTC
From: pevy@mobira.nmp.nokia.com
Message-ID: <32neot$3tc@noknic.nokia.com>
Source record: 116712

Hi
I am currenty considering a project using a cdrom interface
cvard to talk to a piece of custom hardware (a high speed tnc).
I am having trouble locating the details of the Mitsumi cd rom
interface. Specifically, I need details of the interface cable from
driver to drive, pin identifcation etc. (A detailed electrical spec would
make me very pleased).

If anybody has this information I will be most grateful.

Thanks

Andy Pevy.

email:- Andy_Pevy@g4xyw.demon.co.uk

2275. HTX100 vs Uniden 2500

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 13:32:13 UTC
From: ao859@FreeNet.Carleton.CA
Message-ID: <CuKw9p.IHK@freenet.carleton.ca>
Source record: 116713

Anyone aware of the possibility of modifying a radio shack htx100 10m

to work on lower sideband as does the Uniden. I have heard these

to radios have common controllers. I have looked at the possiblity

of moving the injection in the HTX however this might be acheived

using the proccessor/pll.

I would appreciate any hints or the possibility of obtaining

copies of the uniden 2500 schematics/serice manual.

The reason for this is using the 10m set through a transverter to

go through the invertin transponders of oscar 10/13 ie LSB up to

USB down.

Jeff Ve3eff

--

2276. 'Debugging' a receiver - tips ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 15:00:51 UTC
From: dmb@abacus.demon.co.uk
Message-ID: <CuL0DF.1Ap@abacus.demon.co.uk>
Source record: 116714

After a year of stop/start, I've completed my latest rx. When the great day arrived, I connected the power, the S-meter bipped a cheery welcome, and the world was filled with a deafening silence (apart from a bit of hum thru the speaker from the power supply).

Now I'm preparing to trace thru the connections, re-check the transistor/diode/chips in case any slipped thru the wrong way around, check polarity on electrolytics etc. and generally trace the circuit to check for bad joints, incorrect/missing connections etc.

However, it's occurred to me that although this has to be done anyway, there might be a way to identify where the fault is likely to be, by checking the circuitry in modules. It's a supherhet with 2 IF stages. So the fault(s) could be in any of the following:

RF amp, antenna trim, VFO, mixer, BFO, product detector, IF stages, CW filter, audio amp, S-meter circuit, or power supply.

Can anyone suggest anything that might help in testing any of these ?
e.g. "to test the VFO, power up, and check that the output is (high/low/dead)" or whatever ...

73

David.
--
David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445
Here's a koan: If you have ice-cream I will give you some. If you have none, I will take it away from you. (it's an ice-cream koan).

2277. Re: Marconi

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 15:04:32 UTC
From: vaillan@ireq.hydro.qc.ca
Message-ID: <CuL0JL.J1r@ireq.hydro.qc.ca>
Source record: 116518

In article 1gl@dawn.mmm.com, tahir@tcdsp1.mmm.com ("Tahir Kayani") writes:
>Is there a company called Canadian Marconi Company CMC ? A friend of mine
>has a set TD-5064 that he bought as junk. A telephone number and/or address
>would be appreciated.
>--
>

They are in Montreal area, the number is: 514-748-3148
Good Luck.
Clement

Clement Vaillancourt, | Institut de Recherche d'Hydro-Quebec
Analyste, | Varennes, P. Quebec, Canada, J3X 1S1
Informatique scientifique | Tel:+1 514 652 8238 Fax:+1 514 652 8309
vaillan@ireq.hydro.qc.ca | Radio-amateur: VE2HQJ@VE2CRL.PQ.CAN.NA

2278. Re: 'Debugging' a receiver - tips ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 17:00:25 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug15.170025.13624@ke4zv.atl.ga.us>
Source record: 116519

In article <CuL0DF.1Ap@abacus.demon.co.uk> dmb@abacus.demon.co.uk (David Byrne) writes:
>
>After a year of stop/start, I've completed my latest rx. When the great day
>arrived, I connected the power, the S-meter bipped a cheery welcome, and the
>world was filled with a deafening silence (apart from a bit of hum thru the
>speaker from the power supply).
>
>Now I'm preparing to trace thru the connections, re-check the transistor/
>diode/chips in case any slipped thru the wrong way around, check polarity on
>electrolytics etc. and generally trace the circuit to check for bad joints,
>incorrect/missing connections etc.
>
>However, it's occurred to me that although this has to be done anyway, there
>might be a way to identify where the fault is likely to be, by checking the
>circuitry in modules. It's a supherhet with 2 IF stages. So the fault(s) could
>be in any of the following:
>
>RF amp, antenna trim, VFO, mixer, BFO, product detector, IF stages, CW filter,
>audio amp, S-meter circuit, or power supply.
>
>Can anyone suggest anything that might help in testing any of these ?
>e.g. "to test the VFO, power up, and check that the output is (high/low/dead)"
>or whatever ...

Usually, the best method to troubleshoot a receiver is to start with
the power supply. If all the voltages are present, then do a binary
search. Signal injection and tracing are the methods to use. Insert
an audio signal at the top of the volume control and listen for output.
If you get a nice clean tone, move to the IF and inject a signal there.
If, OTOH you don't hear anything, inject the tone (higher level) at the
audio output amp, etc. Divide and conquer until the problem is isolated
to a single stage, then component level troubleshoot from there.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2279. Re: toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 17:36:38 UTC
From: rkarlqu@scd.hp.com
Message-ID: <32o936$b4n@hpscit.sc.hp.com>
Source record: 116715

In article <489@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:
>
>In article <93.1530.7584.0NFB2DA4@woodybbs.com>, Jim Salvino (jim.salvino@woodybbs.com)
writes:
>>I am looking for a couple of 88mh toroids for a project I am
>>building - does anyone have an idea where I could locate
>>them??????? Thanks WB2CXZ Jim
>
>Don't see much call for these any more, with active filters so easy to
>do (quad low-noise op-amps are under a buck). I'm curious to know what
>you're trying to do.
>
>73,
>Mike, KK6GM
>

Interesting that you bring that up. I once bought an MFJ RTTY demodulator.
The schematic was obviously copied from the ST-6 demodulator that appeared
in Ham Radio Magazine in the early 70's, except they had "modernized" it
with active mark and space filters, replacing the original 88 mH. toroids.
Now it just so happens that I once built a real ST-6, and there was no
comparison between the two. My unit with toroids had much better selectivity
than the MFJ, which was inadequate for 170 shift.

Did MFJ screw up their active filter design? Well, they're not rocket
scientists down in Mississippi, but it's really a problem
with trying to get too high of a Q in an active filter. It turns out that
it is damn hard to build a manufacturable high Q active bandpass filter,
no matter how much you know about filter design. A 50 cent toroid is far
cheaper and better.

If you insist on doing it, build a state variable filter with adjustments,
and adjust it! Be sure to use 10 MHz. op amps like 5532's, not 1 MHz.
op amps. And use plastic (mylar) capacitors, not ceramic. I shouldn't
need to remind you to avoid carbon comp resistors.

Rick N6RK
rkarlqu@scd.hp.com

2280. Re: Need wide-range VCO circuit for cheap receiver project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 17:54:51 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <1994Aug15.175451.25071@vlsi.polymtl.ca>
Source record: 116717
Body handling: HTML body converted to readable text

In article vimx writes:
> I would like to know if there is a circuit that has the range of a cable
>box VCO. It does not have to be stable (drift is ok). All the varactor
>tuner circuits ive seen have very narrow ranges. I am also thinking of
>building a spectrum analyzer with this VCO and a NE602. The PMSA is too
>expensive for me. And my application does not demand accuracy or even
>calibration.

Try using a VHF and UHF TV tuner. the VCOs in these devices will cover
the band you want.

Nick

2281. DSP on a SoundBlaster

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 18:24:55 UTC
From: BRUSCH@NCSBST01CA.NTC.NOKIA.COM
Message-ID: <BRUSCH.1.00126AD8@NCSBST01CA.NTC.NOKIA.COM>
Source record: 116531

Steven L. Work (slwork@netcom.com) wrote:
: Does anyone know how you configure a Sound Blaster 16 (with an "ASP") to
: do real-time processing of audio signals. What I mean is taking audio
: input from its a/d, manipulating it, and presenting the output on its d/a
: converter immediately. It seems to me that they have designed the
: hardware to be able to do this, but I can't find anything in their
: documentation or on the Creative BBS which describes how to do this.

: By real-time, I mean processing of audio on the fly WITHOUT saving it to
: disk. Examples of such processing would be lead vocal cancellation
: (channel subtraction), surround-sound, and adding echoes.

On a local software archive I found a program which uses a SoundBlaster (type unknown) to perform an FFT, then look for a tone and decode it as morse. The program is stored as fftmorse.zip; the copyright notice is 1992 and the program was written by:

Fran&#xFFFD;ois Jalbert (jalbert@IRO.UMontreal.CA)

The C source code for the program is included and the .doc file includes a good desciption of the code and the FFT implementation (DFT actually). If you can't find the file on your local PD archive I can probably mail it (it's only 27k).

de G7FTY - Simon [new to internet news groups]

2282. Re: toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 18:59:32 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CuLBF9.8x7@freenet.buffalo.edu>
Source record: 116716

In a previous article, rkarlqu@scd.hp.com (Richard Karlquist) says:

>In article <489@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:
>>
>>In article <93.1530.7584.0NFB2DA4@woodybbs.com>, Jim Salvino (jim.salvino@woodybbs.com)
writes:
>>>I am looking for a couple of 88mh toroids for a project I am
>>>building - does anyone have an idea where I could locate
>>>them??????? Thanks WB2CXZ Jim
>>
>>Don't see much call for these any more, with active filters so easy to
>>do (quad low-noise op-amps are under a buck). I'm curious to know what
>>you're trying to do.
>>
>>73,
>>Mike, KK6GM
>>
>
>Interesting that you bring that up. I once bought an MFJ RTTY demodulator.
>The schematic was obviously copied from the ST-6 demodulator that appeared
>in Ham Radio Magazine in the early 70's, except they had "modernized" it
>with active mark and space filters, replacing the original 88 mH. toroids.
>Now it just so happens that I once built a real ST-6, and there was no
>comparison between the two. My unit with toroids had much better selectivity
>than the MFJ, which was inadequate for 170 shift.
>
>Did MFJ screw up their active filter design? Well, they're not rocket
>scientists down in Mississippi, but it's really a problem
>with trying to get too high of a Q in an active filter. It turns out that
>it is damn hard to build a manufacturable high Q active bandpass filter,
>no matter how much you know about filter design. A 50 cent toroid is far
>cheaper and better.
>
>If you insist on doing it, build a state variable filter with adjustments,
>and adjust it! Be sure to use 10 MHz. op amps like 5532's, not 1 MHz.
>op amps. And use plastic (mylar) capacitors, not ceramic. I shouldn't
>need to remind you to avoid carbon comp resistors.
>
>Rick N6RK
>rkarlqu@scd.hp.com
>
>
It has also been said that narrow audio filters of the LC (toroids) or
other inductors have less ring and are easier on the ears than active

filters.

Kurt, N2TTE
--

2283. Re: Source for Mini Circuits Mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 20:41:42 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CuLG5J.54M@srgenprp.sr.hp.com>
Source record: 116520

GURU314708 (guru314708@aol.com) wrote:
: Does anyone have a source for Mini Circuits 500-1000 Mhz.
: Doubly or Singly Balanced mixers in small quantities???

Mini-Circuits sells direct in small quantities. 1-800-654-7949.

AL N1AL

2284. Re: HTX100 vs Uniden 2500

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 21:11:26 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1508941711260001@128.159.123.111>
Source record: 116522

In article <CuKw9p.IHK@freenet.carleton.ca>, ao859@FreeNet.Carleton.CA (Jeff A. Milne) wrote:
> Anyone aware of the possibility of modifying a radio shack htx100 10m
>
> to work on lower sideband as does the Uniden.

Jeff-

I don't have my notes handy, so the following may be a bit "flakey"!

As far as I can tell, all you have to do is warp the HTX-100's USB crystal so it is on the opposite side of the IF filter, and you will change to LSB. I recollect that there may be a fixed capacitor in parallel with the adjustable capacitor used to calibrate the frequency. By changing the parallel capacitor, you may be able to move the frequency, and keep some adjustability. It only needs to move about 3 or 4 KHz.

If you were to come up with a potentiometer-controlled voltage variable capacitor arrangement with sufficient range, you might not only change sidebands, but would have a tunable IF. This is essentially how the Kenwood TS-430's IF bandpass tuning works, except it has very limited tuning range.

This IF signal is both up and down converted by the same local oscillator, so its frequency won't affect the over-all transmit frequency. (It has been noted that most of the Uniden radios, which includes the HTX-100, come aligned between 100 and 200 Hz low, as if they were all set by the same bad counter!)

73, Fred, K4DII

2285. Re: Modify an old cellphone to 902-928 MHz?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-15 21:27:56 UTC
From: clau@acs.ucalgary.ca
Message-ID: <Aug15.212756.30547@acs.ucalgary.ca>
Source record: 116521

Charles G. Lafkoff (cs684@cleveland.Freenet.Edu) wrote:
:
:
: I found several old (1985) cell phone units that were designed
: to be mounted in the trunks of cars, similar to mobile radios.
: They were manufactured by Novatel Communications, LTD, in Korea,
: with an FCC ID of: BFC8J7VTR-2881. Power required is 13.6 volts
: and claimed output is 3 watts. Size is 11.5" x 10" x 2.75".
: Inside, the antenna feeds an 800 MHz duplexer which is connected to
: a power amplifier unit and a receiver unit. Both the power
: amplifier and receive units seem to connect to a frequency
: synthesizer (?) board. Underneath all of this is the logic\CPU
: board which has the ESN PROM, which, I guess, controls the
: frequencies, etc. The whole thing is built like a tank out of
: aluminum and all of the RF modules are entirely separate and
: shielded very well.
:
: I would like to attempt to tune the boards to work at 902-928
: MHz FM, and\or, using one of Down East Microwave's transverter
: units, drive the amplifier to 6 watts or so for 902.1 MHz SSB with
: 144 MHz as an IF. (Assuming it's linear!)
:
: If anyone has info on a source of schematics, data, etc. or
: has attempted a similar project, I'd appreciate hearing about your
: results.
:

Contact Larry Chappel (VE6LKC I believe) and Russ Braathen via the Calgary
Amature Radio Assn. Both were employees of NovAtel and have done
some reworking of various NovAtel units. I've also got a NovAtel 8305A
(EAMPS) mobile with flexible antenna (I used it with one of those prototype
rechargeable lithium cells before they got recalled due to extreme explosion
hazard, but that's another story) that I'll let go for cheap if you or
anyone else wants it.

:
: --Charlie WD5GNW, Spring, Texas USA [713] 288-4547

c4
--
Christopher Lau | Dammit Jim, I'm a doctor,
The University of Calgary | not an engineer!
Dept. of Electrical & Computer Engg. | Well, you're an engineer now..
lau@enel.ucalgary.ca -OR- clau@acs.ucalgary.ca -OR- root@fusion.cuc.ab.ca

2286. Re: simple 7MHz power amp ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 00:11:28 UTC
From: drew@trl.oz.au
Message-ID: <drew.163.0@trl.oz.au>
Source record: 116523

In article <32n9p5$suh@info2.rus.uni-stuttgart.de> deap1032@servus11.rus.uni-stuttgart.de (Bruegemann) writes:
>From: deap1032@servus11.rus.uni-stuttgart.de (Bruegemann)
>Subject: simple 7MHz power amp ?
>Date: 15 Aug 1994 08:42:13 GMT
>Hello,
>
>I am interested in building a simple transistor power amp,
>with 2W in and 50 or so watts out on 40m. I know that old
>ARRL hand books used to have that. but I have no access to one.
>Does anyone have a modern design, e.g. using a low cost MOSFET?
>
>Thanks in advance, Moritz DL5UH
>e-mail: deap1032@servus.rus.uni-stuttgart.de

A pair of cheap IRF511's (about $1 each mail order from the US) in push-pull arrangement with a 30 Vdc supply voltage will give you 30 to 40 W RF out with about 2 W RF drive on 7 MHz, and about 50 W on 3.5 MHz; see RSGB Radio Communications Tech Topics March '91. You can really work the IRF511's hard if you have an effective heat-sink. By cutting rectangular holes in the circuit board, it is possible to mount the devices direct to chassis (with suitable insulating h'ware) thus obtaining a really effective cheap heatsink.

Also see Rad Comm Tech Topics for May '90, where is described a push-pull/parallel arrangemet of VN88AFD devices powered from a 35 V supply yielding 50 W RF output.

73, Drew, VK3XU Telecom Australia Research Labortories.

2287. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 00:25:59 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <776996759snz@arkas.demon.co.uk>
Source record: 116524

In article <btobackCuHoqM.89p@netcom.com>
btoback@netcom.com "Bruce Toback" writes:

> In article <1994Aug10.132958.5539@atd.rochester.ny.us> al@atd.rochester.ny.us
> (Al Davis) writes:
> >FM stereo is time division multiplexed.
>
> ?? I thought FM stereo was frequency-division multiplexed, with a 38 KHz
> subcarrier carrying an L-R signal added to the baseband L+R signal.
>

Yes, L-R is used to DSB-modulate the 38 kHz sub-carrier. A phase-related 19 kHz pilot tone is added to the signal, as well as L+R, and the resulting composite signal is used to FM the carrier. The 19 kHz pilot tone is doubled by the stereo receiver to provide the re-inserted in-phase 38 kHz sub-carrier needed to detect the L-R component in a product detector. Then, an audio matrix resolves L and R channels by L = ((L+R)+(L-R))/2; and R = ((L+R)-(L-R))/2.

73's de VK2ENG.

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2288. Tube and socket wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 01:07:34 UTC
From: wrt@eskimo.com
Message-ID: <CuLsGs.EED@eskimo.com>
Source record: 116526
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew

Looking for a 4CX1000A and socket or similar tube suitable for six meter amp.

Tnx de Bill, W7LZP

Phone: 206-672-3900 or email.

2289. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 01:19:52 UTC
From: jeffj@crl.com
Message-ID: <32p47o$6e3@nntp.crl.com>
Source record: 116525

Jeffrey Yuan (yuan@phoenix.princeton.edu) wrote:

: In article <9408100130.AA12423@leo.nmc.edu> David Brodbeck, :
ai351@leo.nmc.EDU writes: : > : >I need a TCM3105 chip. This is a 16-pin
1200 bps half-duplex modem chip : >made by Texas Instruments. I need it
to build the Poor Man's Packet : >interface. Does anyone know where this
is available in single : quantities? : >: > : >-- :
>-=- :
>ai351@leo.nmc.edu David Brodbeck : > Amateur packet (AX.25):
N8SRE@wb4vva.#nemi.mi.usa.na
: >-=-

: Try JDR Microdevices. I do not have their phone number off hand but they
: advertise in Byte and Electronics Now. Last time I looked, they were
: selling the TCM3105 for ~$5.00.

I looked in their catalog and didn't see it. Do you know of any other
sources?

--
jeffj@crl.com | If work for a living and think the Republican party is your
AB6MB | friend. Ask Republican congressmen if they ever would side
| with labor over business. Then watch them laugh in your face!

2290. HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 01:28:00 UTC
From: u1066579@csdvax.csd.unsw.edu.au
Message-ID: <1994Aug16.112800.2208@csdvax.csd.unsw.edu.au>
Source record: 116528
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Hi,
I am interested in how I can supply power to a circuit without the need for any physical contacts. I thought that I could have two coils. One would be connected to an AC source (the transmitting coil), the other coil (the receiving coil) would be connected to my circuit. I would then have a bridge rectifier on the output from the "receiving coil" to provide DC for the circuit.
Can someone tell me if this is practical? How should I go about constructing the coils? Are there any references anyone know of on "wireless"power supplies?

Best Wishes,
Henry.
PS:Plz E-mail if possible my E-mail address is:

u1066579@csdvax.csd.unsw.edu.au

2291. ** FLEA at MIT ** Sunday 21 August Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 03:13:42 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <32pat6$5d7@senator-bedfellow.MIT.EDU>
Source record: 116527
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

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MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ************

****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

2292. Anyone built FFT analyser in '93 ARRL H'book ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 03:34:35 UTC
From: jbrown@jabba.cybernetics.net
Message-ID: <32pc4b$eg1@jabba.cybernetics.net>
Source record: 116529

I ran across this project today while thumbing thru last year's Handbook.
I need to do some AF analysis and this looks like a quick and dirty way
to get going.

How well has it worked for any of you who have built it? Is the software
available via FTP over the net? Given a fast computer, would it be
possible to increase the bandwidth of the analyser?
--
Jeff Brown jbrown@cybernetics.net

2293. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 06:29:09 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <777018549snz@lfheller.demon.co.uk>
Source record: 116530

In article <89593.BSoranno@vax2.winona.msus.edu>
BSoranno@vax2.winona.msus.edu "Bill Soranno KB0NKX" writes:

> Where can I get more information on the "Poor Man's Packet interface".
> Does it have a standard serial port, or is it an internal board for a
> particular computer?
>
> Any info would be appreciated.
>
> Bill Soranno -- KB0NKX
> 7 Fairfax
> Winona, MN 55987
> 507/452-3789
>
This is presumably something like the Baycom packet modem. I built one
and it works fine. It is basically a very simple 1200 baud modem that
is self-powered by a PC serial port. All the packet stuff that is handled
by the Z80 or whatever on a conventional TNC is done by software running
on the PC itself. There are similar packages using the same modem for
other systems like Macs and Amigas. Ramsey supply a kit for the PC.

Leon
--
Leon Heller, G1HSM
E-mail: leon@lfheller.demon.co.uk
Tel: +44 (0)734 266679

2294. Re 88 Mh toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 10:54:26 UTC
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org
Message-ID: <1994Aug16.065426.24150@wb3ffv.wb3ffv.ampr.org>
Source record: 116533

Re the recent query, you might want to write (with SASE) to Ed Wetherhold, W3NQN; I don't have his address handy, but he moved a few years ago across town in Annapolis and his current location is on Catlyn Ave (ie, use a fairly recent callbook!) He has had quite a few excellent articles on filters over the years in a wide variety of amateur and trade and professional journals, and also the ARRL Handbook. He has been providing used telephone company toroids for years; they are supplied free for amateur use (you pay shipping only), through an arrangement he has with a local phone company. I assume the offer still stands. He also sells, at reasonable cost, the various components needed to build up some of his audio filter circuits; this included MATCHED capacitor sets--he laboriously sits down with a capacitance meter and makes up batches of caps--since some of the values in the circuits are odd ones, he solders two caps together to get the proper value, and that takes a lot of time. For what he charges forthe matched sets of caps, it's a bargain any way you look at it. I tried two of his filter designs for CW, one 534 Hz and the other around 750 Hz, and the response was unbelievable! You have to hear them to believe them. There is some loss, of course, about 3 dB, but a small price to pay for the incredible selectivity. 73...

2295. Re: 'Debugging' a receiver - tips ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 12:24:39 UTC
From: zlau@arrl.org
Message-ID: <1994Aug16.122439.21721@arrl.org>
Source record: 116536

David Byrne London, UK (dmb@abacus.demon.co.uk) wrote:

My usual procedure is to build stuff circuit by circuit,
testing each stage out as I finish it. A circuit is
defined is something that I can test :-). It helps to have
a signal generator/spectrum analyzer. Not as nice but almost
as useful is an amateur transceiver.

Generally, the less test equipment you have the more you will
have to rely on ingenuity. For instance, one way to
align a gunnplexer's circulator is with a noise figure meter.
However, the results (mixer current) was almost identical to that
obtained by listening to a weak signal across a room.

MMICs might be used as inexpensive NF standards. Unless you are
trying to tweak out better NF with input matching or using a 6 GHz
one at 10 GHz, they are usually pretty close to data sheet numbers.
Thus, you might test out your hot new preamp/IF amp against a MAR-6 up
through 1296 and against a MGA-86576 (2.3 to 5.7 GHz).
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2296. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 12:53:15 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <32qcrr$17ls@info2.rus.uni-stuttgart.de>
Source record: 116532
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Hello Henry

the wireless power suply works, as long as you keep two things in mind:
the distance must not be larger than the size of TX/RX coils,
the system may cause interfernce to the unit supplied.

Hope this helps, bye, Moritz

2297. PLEASE USE e-mail address

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 13:42:35 UTC
From: mack@mails.imed.COM
Message-ID: <9407167770.AA777052241@mails.imed.com>
Source record: 116534

This is to John Drake and others who request a direct e-mail response.

There are many (most of us?) who are quite glad and eager to help
those in need of information. However, it is nearly impossible to
respond to a request unless you put your e-mail address in the body of
the message as I have done below.

PLEASE include your e-mail address in all postings!

Ray Mack
WD5IFS
mack@mails.imed.com

2298. Antenna Grounding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 13:47:21 UTC
From: jfj@myhost.subdomain.domain
Message-ID: <32qg19$68p@redwood.cs.scarolina.edu>
Source record: 116535

I am building a balanced antenna system. Neither the tuner (KH6CP "Balanced
QRP Tuner") nor the antenna have provisions for a DC ground/bleed connection.
Question: how to prevent buildup of static DC voltages in the system?
More to the point- where and what value RF choke could be used in such a
set up?
73s es best QRP, John KE2WB
--
NAME John Jarvis jfj@pacer1.usca.scarolina.edu
SNAIL Dept. of Mathematical Sciences, University of SC
171 University Parkway, Aiken, SC 29801
PHONE Bus: (803) 648 6851 x3264 Home: (706) 737-8858

2299. Re: Help! I need info on cheep telemetry methods.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 14:02:11 UTC
From: smasters@bzy.gmu.edu
Message-ID: <32qgt3$8lt@portal.gmu.edu>
Source record: 116537

Asuuming a low data rate, a simple Audio Frequency Shift Keying modem and a simple TX RX pair should do the trick.

First, pick an audio TX and RX radios for communications. Hamtronics makes some cheap ones in a number of different frequencies. I imagine a small antenna is optimal, so you should look at 400 MHz or 900MHz.

Second, build a modulator. A XR2206 is a simple single chip solution. It takes a digital input and outputs a true sine wave.

Third, build the demodulator. A PLL, like the 5WHatever from national work like a charm for a simple demodulator. In fact a basic design is in the data books.

Now you hook the modulator to a microcontroller's serial port in the rocket, and the demodulator to the PC. All the timing is already done for you.

Good luck and 73,
Shawn KE4GHS

PS: Be careful in choosing keying frequencies and data rates.

2300. Re: Antenna Grounding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 14:35:58 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Aug16.143558.18005@ke4zv.atl.ga.us>
Source record: 116543

In article <32qg19$68p@redwood.cs.scarolina.edu> pacer1.usca.scarolina.edu writes:
>I am building a balanced antenna system. Neither the tuner (KH6CP "Balanced
>QRP Tuner") nor the antenna have provisions for a DC ground/bleed connection.
>Question: how to prevent buildup of static DC voltages in the system?
>More to the point- where and what value RF choke could be used in such a
>set up?
> 73s es best QRP, John KE2WB

John, there are several solutions. The commercial approach is to use
a pair of gas discharge tubes on the balanced line to ground. For
receiving, NE-2 bulbs are commonly used (though they can become noise
generators in themselves). For transmitting, proper tubes are available
from Polyphaser that are self quenching. Along with a proper grounding
system, this latter approach will provide lightning protection as well
as static drain.

Another simple approach is to use a carbon resistor, 10k or greater,
center tapped on the balanced output coil to ground. If the antenna
system is well balanced, no signal will flow in this resistor, but
static charges will be drained off the antenna.

A choke can be used here as well, but care must be taken to make sure
it offers no self resonances over the band of interest.

These latter two approaches offer little or no lightning protection.
Therefore you should install a DPDT knife switch at the entrance
point so you can disconnect the feeders and ground them during periods
when you aren't operating.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2301. Re: Antenna Grounding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 14:36:41 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.777047801@melpar>
Source record: 116538

jfj@myhost.subdomain.domain (John F. Jarvis) writes:

>I am building a balanced antenna system. Neither the tuner (KH6CP "Balanced
>QRP Tuner") nor the antenna have provisions for a DC ground/bleed connection.
>Question: how to prevent buildup of static DC voltages in the system?
>More to the point- where and what value RF choke could be used in such a
>set up?

My favorite method is a DPDT knife switch located at the entry point into the house (usually a window) with each side of the balanced line grounded through the switch when not in use. I'm not sure where one can obtain a suitable knofe switch these days; mine has the two poles spaced properly for 450-ohm balanced line, with brass contacts and a porcelin base; I've had it for 30 years.

I'll check my NAB Engineering Handbook for static drain choke parameters and get back to you; used to use one at the AM station I was CE of in the '70s, since our 400' tower was series-fed and thus ungrounded. We did have a problem with the static drain opening up due to fairly large currents generated when thunderstorms were in the area, so as a rule of thumb I'd suggest something with a high current rating (such as a high-power transmitting choke). 400 mH will give you a reactance of about 4500 ohms (10 times the feedline Z) at 1.8 MHz, but that's a pretty large choke, especially if it's wound with large wire. Try playing with some numbers (I'd suggest not using less than 5 times Z for the reactance at the lowest operating frequency) and see how that compares with what's in your junk box and/or otherwise available. Remember that you'll need two, one for each side of the transmission line. I'd recommend installation at the building egress, with a direct heavy ground connection to a buried rod.

73,

Paul, K4MSG

(|_|) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
| |) Principal Systems Engineer Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from around it....." - anonymous radiotelegraph operator

2302. Homebrew 12v 10A PSU

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 15:02:38 UTC
From: det@compd.com
Message-ID: <776728334snx@compd.com>
Source record: 116539

Hi,
Has anyone got a simple cct for a good protected 12v 10A power
supply.

Dave.
--
Std. disclaimer..... My own opinions are not those of my employer
+---+
| David Twist Post Design Services Hardware Support |
| Computing Devices Company Ltd, Castleham Road |
| St. Leonards On Sea, East Sussex, UK TN38 9NJ |
| Tel: 44-(0)1424-853481 Fax: 44-(0)1424-851520 |
+---+

2303. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 15:25:59 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <CuMw7B.1tvF@yuma.ACNS.ColoState.EDU>
Source record: 116542

In article <CuK7H6.6sr@utnetw.utoledo.edu> pouelle@uoft02.utoledo.edu writes:
>In article <5QyTM9i.mstrand@delphi.com>, mstrand@delphi.com writes:
>>Ben Slagle <aq760@yfn.ysu.edu> writes:
>>>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>>>like it to be in the area of 10 watts... nothing fancy, just a
>>If you can find an old tube type low band (40 - 50 mHz) two way radio,
>>Motorola, GE, etc, the final amp could easily be moved to 6m. These are
>If you wanted a 10w solid state amp, you could base it on the 2sc3133. ICOM
>uses it in an older 6m rig (IC-505) and the transistor is not too expensive.

Mitsubishi has a 6m amp module, 14 watts with 12.5 volts, 200mW drive, the
M57735.
Unfortunatly, it doesn't smell like a tube.

Anybody know of some 300-1000 watt tube amps for 6m?

Post it for everybody.

Love that tube smell,
galen, KF0YJ

2304. Re: Antenna Grounding

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 15:54:39 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.777052479@melpar>
Source record: 116540

phb@syseng1.melpar.esys.com (Paul H. Bock) writes:

>rating (such as a high-power transmitting choke). 400 mH will give you
>a reactance of about 4500 ohms (10 times the feedline Z) at 1.8 MHz,
>but that's a pretty large choke, especially if it's wound with large

OOPS!!!!! Please change "400 mH" to "400 uH"!!!!! Typo....
and boy, would THAT ever be a large RF choke!!!

Paul, K4MSG

2305. Please a beginner!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 16:04:51 UTC
From: gulu@bu.edu
Message-ID: <32qo33$a5p@news.bu.edu>
Source record: 116541

Hi,
I have been interested in the concept of ham radio for a while now
but have not done anything about it except buy a book(and tape) that helps me
learn the morse code. But I am interested in the following things:

1) Getting a ham radio license.

2) Making (from a kit, perhaps) a radio transmitter capable of
transmitting relatively long distance (a few thousand miles).

I have never even soldered a wire to a board. So, I have the
following questions:

Is it feasible for me to attempt #2 above?
How much is it likely to cost?
What should I expect to pay for similar equipment if I BUY it outright?
Are there any pitfalls I am overlooking in attempting to build an amateur
station rather than buying it? In other words what are the pros and cons
for a beginner?
I don't know if this is the appropriate news group for this
particular question, but what is the procedure that I need to follow
for getting the novice (?) license? I do have this book but it is kind
of old.

Well, thanks in advance for all your advice and help.
I would appreciate email responses to : gulu@engpub1.bu.edu

Gulu.

2306. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 16:50:08 UTC
From: nagle@netcom.com
Message-ID: <nagleCun03L.lzv@netcom.com>
Source record: 116546
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

u1066579@csdvax.csd.unsw.edu.au writes:
> I am interested in how I can supply power to a circuit without the need
>for any physical contacts. I thought that I could have two coils. One would
>be connected to an AC source (the transmitting coil), the other coil (the
>receiving coil) would be connected to my circuit. I would then have a bridge
>rectifier on the output from the "receiving coil" to provide DC for the
>circuit.
>Can someone tell me if this is practical? How should I go about constructing
>the coils? Are there any references anyone know of on "wireless"power
>supplies?

This is a common way to get power across a short distance.
Applications include recharging pacemakers, recharging electric buses,
and recharging electric cars. The basic idea is to build a split
transformer.

What distance did you have in mind?

John Nagle

2307. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 16:56:13 UTC
From: dmb@abacus.demon.co.uk
Message-ID: <Cun0Dq.7to@abacus.demon.co.uk>
Source record: 116560
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <1994Aug16.112800.2208@csdvax.csd.unsw.edu.au>,
<u1066579@csdvax.csd.unsw.edu.au> wrote:
> I am interested in how I can supply power to a circuit without the need
>for any physical contacts. I thought that I could have two coils. One would
>be connected to an AC source (the transmitting coil), the other coil (the
>receiving coil) would be connected to my circuit. I would then have a bridge
>rectifier on the output from the "receiving coil" to provide DC for the
>circuit.

Isn't this a job for an isolation transformer, or do the two coils have to be
far away from each other ?

It sounds like a 1:1 transformer will do the trick...
--
David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445
Here's a koan: If you have ice-cream I will give you some. If you have none,
I will take it away from you. (it's an ice-cream koan).

2308. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 17:24:01 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <777057841snz@lfheller.demon.co.uk>
Source record: 116553
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <1994Aug16.112800.2208@csdvax.csd.unsw.edu.au>
u1066579@csdvax.csd.unsw.edu.au writes:

>
> Hi,
> I am interested in how I can supply power to a circuit without the need
> for any physical contacts. I thought that I could have two coils. One would
> be connected to an AC source (the transmitting coil), the other coil (the
> receiving coil) would be connected to my circuit. I would then have a bridge
> rectifier on the output from the "receiving coil" to provide DC for the
> circuit.
> Can someone tell me if this is practical? How should I go about constructing
> the coils? Are there any references anyone know of on "wireless"power
> supplies?
>
> Best Wishes,
> Henry.
> PS:Plz E-mail if possible my E-mail address is:
>
> u1066579@csdvax.csd.unsw.edu.au
>

This definitely works. The technique is used for powering surgical
implants.

Leon
--
Leon Heller, G1HSM
E-mail: leon@lfheller.demon.co.uk
Tel: +44 (0)734 266679

2309. Re: TNC construction article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 17:54:35 UTC
From: dave@llondel.demon.co.uk
Message-ID: <777084875snx@llondel.demon.co.uk>
Source record: 116562
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <22449.BSoranno@vax2.winona.msus.edu> <BSoranno@vax2.winona.msus.edu> writes:
>Does anybody know of a construction article for a "general purpose" TNC?
>
>These are my reguirements:
>1) Standard serial connection. (I have 4 different computers and would like
> to be able to connect to all).
>
>2) An internal processor of some type to minimize the overhead on the
> computer.
>
I know of five TNC2 clone designs available in the UK, or you could ask
TAPR if they still do one themselves. By using one you have the
advantage of being able to run all sorts of different bits of software
depending on your current fancy. Be careful about which modem chip a
particular design uses though, because it appears that the 7910 is being
discontinued.

Dave
--

****
* G4WRW @ GB7WRW.#41.GBR.EU AX25 * *
* dave@llondel.demon.co.uk Internet * Stop the World! I want to get off! *
* g4wrw@g4wrw.ampr.org Amprnet * *
****

2310. Current Capacity?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 18:16:53 UTC
From: kenman@iastate.edu
Message-ID: <32qvql$pc5@news.iastate.edu>
Source record: 116544

Could someone please email the current capacity of 24 AWG copper wire (stranded). It will be used at 13.8V.

I've looked all over and can't find it. Is there a data book that has information for "small" circuit components?

Thank you, Ken

--
Ken Anderson N0ZEM PH: 515.294.8996 Kenman@iastate.edu
126 Soil Tilth Bldg. N0ZEM@KI0Q.#CIA.IA.USA.NA
Iowa State University, Ames, Iowa 50011

2311. Re: Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 19:10:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940816191041OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 116559

>>I'd like to hear more from those in the know on this subject. No
>>commercial gear still uses audio LC filters, does it? Is the TL071
>>series good enough for reasonable results (I've settled on these for
>>generic experimenting). I've got the "Active Filter Cookbook", how

And what's the difference between the TL07x and TL08x series?

I've tried comparing the databook entries and the difference
doesn't leap out at me.

I think the TL08x came out first...

2312. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 19:14:00 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <Cun6rD.vs@utnetw.utoledo.edu>
Source record: 116550

In article <32p47o$6e3@nntp.crl.com>, jeffj@crl.com (Jeff Jones) writes:
>Jeffrey Yuan (yuan@phoenix.princeton.edu) wrote:
>
>: In article <9408100130.AA12423@leo.nmc.edu> David Brodbeck, :
>ai351@leo.nmc.EDU writes: : > : >I need a TCM3105 chip. This is a 16-pin
>1200 bps half-duplex modem chip : >made by Texas Instruments. I need it
>to build the Poor Man's Packet : >interface. Does anyone know where this
>is available in single : quantities? : >: > : >-- :
>>-=- :
>>ai351@leo.nmc.edu David Brodbeck : > Amateur packet (AX.25):
>N8SRE@wb4vva.#nemi.mi.usa.na
>: >-=-
>
>: Try JDR Microdevices. I do not have their phone number off hand but they
>: advertise in Byte and Electronics Now. Last time I looked, they were
>: selling the TCM3105 for ~$5.00.
>
>I looked in their catalog and didn't see it. Do you know of any other
>sources?
>
> --
>jeffj@crl.com | If work for a living and think the Republican party is your
>AB6MB | friend. Ask Republican congressmen if they ever would side
> | with labor over business. Then watch them laugh in your face!
>
JDR Microdevices 1994 catalog #37 page 14 third column from the right, 21 items
down:
TCM3105 Asychronous FSK voiceband modem 6.95

Patrick
KB8PYM

No, I don't work for JDR - I just buy a few things there.

2313. Re: TNC construction article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 19:35:07 UTC
From: rdonnell@eskimo.com
Message-ID: <Cun7qK.39y@eskimo.com>
Source record: 116547
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.misc

BSoranno@vax2.winona.msus.edu wrote:
: Does anybody know of a construction article for a "general purpose" TNC?

: These are my reguirements:
: 1) Standard serial connection. (I have 4 different computers and would like
: to be able to connect to all).

: 2) An internal processor of some type to minimize the overhead on the
: computer.

: If these are too strict, please let me know.
: Thanks.

: Bill Soranno -- KB0NKX
: 7 Fairfax
: Winona, MN 55987
: 507/452-3789

No - most of the construction articles would be for RTTY terminal units, and pretty old now. Other than some of the now outdated packet-only controllers offered in the mid 80's, there have not been any construction articles I know of for an intellegent data interface. The closest you would have been likely to come was Heathkit's HK-232 clone of the AEA's PK-232, offered as a kit. Heath has been out of the kit business for about 3 years now, so unless you find someone who got a kit and never started it, you're pretty much out of luck. Part of the problem is that the companies that make the multi-mode TNCs have invested lots of money in the programming of their products to support the various modes, and are not interested in giving away their efforts. Also, since these are tightly integrated hardware and software products, the software wouldn't really work on anything else.

I have seen programs mentioned for non-intellegent interfaces usign a PC for the processing, as I'm sure you have, and that, combined with an older dumb modem or terminal unit design is going to be your best chance to get something going that you build. Even with the inexpense of used PC systems to dedicate, its usually not cost effective as compared to one of the commercially manufactured products.

Good luck in your search.

73, Bob

--

Bob Donnell, kd7nm bob@ethanac.kd7nm.ampr.org rdonnell@eskimo.com
Western Washington Amateur IP Address Coordinator (206) 775-3651

2314. Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 20:19:36 UTC
From: mjsilva@ted.win.net
Message-ID: <493@ted.win.net>
Source record: 116551

In article <32o936$b4n@hpscit.sc.hp.com>, Richard Karlquist (rkarlqu@scd.hp.com) writes:
>In article <489@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:
>>
>>In article <93.1530.7584.0NFB2DA4@woodybbs.com>, Jim Salvino (jim.salvino@woodybbs.com)
writes:
>>>I am looking for a couple of 88mh toroids for a project I am
>>>building - does anyone have an idea where I could locate
>>>them??????? Thanks WB2CXZ Jim
>>
>>Don't see much call for these any more, with active filters so easy to
>>do (quad low-noise op-amps are under a buck). I'm curious to know what
>>you're trying to do.
>>
>
>Interesting that you bring that up. I once bought an MFJ RTTY demodulator.
>The schematic was obviously copied from the ST-6 demodulator that appeared
>in Ham Radio Magazine in the early 70's, except they had "modernized" it
>with active mark and space filters, replacing the original 88 mH. toroids.
>Now it just so happens that I once built a real ST-6, and there was no
>comparison between the two. My unit with toroids had much better selectivity
>than the MFJ, which was inadequate for 170 shift.
>
>Did MFJ screw up their active filter design? Well, they're not rocket
>scientists down in Mississippi, but it's really a problem
>with trying to get too high of a Q in an active filter. It turns out that
>it is damn hard to build a manufacturable high Q active bandpass filter,
>no matter how much you know about filter design. A 50 cent toroid is far
>cheaper and better.
>
>If you insist on doing it, build a state variable filter with adjustments,
>and adjust it! Be sure to use 10 MHz. op amps like 5532's, not 1 MHz.
>op amps. And use plastic (mylar) capacitors, not ceramic. I shouldn't
>need to remind you to avoid carbon comp resistors.
>
I'd like to hear more from those in the know on this subject. No
commercial gear still uses audio LC filters, does it? Is the TL071
series good enough for reasonable results (I've settled on these for
generic experimenting). I've got the "Active Filter Cookbook", how
good is it? What other easily-available references are recommended?

Mike, KK6GM

2315. Motorola RF Data Handbooks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 21:27:17 UTC
From: beau@enterprise.america.com
Message-ID: <32ravl$7jg@enterprise.america.com>
Source record: 116548

I am looking for info on obtaining a copy of the Motorola RF data
hand books. Vol II especially. I am planning on building a VHF
and a UHF power amp.

```
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@enterprise.america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

2316. Re: Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 21:34:15 UTC
From: rkarlqu@scd.hp.com
Message-ID: <32rbcn$mt9@hpscit.sc.hp.com>
Source record: 116549

In article <493@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:

>I'd like to hear more from those in the know on this subject. No
>commercial gear still uses audio LC filters, does it? Is the TL071
>series good enough for reasonable results (I've settled on these for
>generic experimenting). I've got the "Active Filter Cookbook", how
>good is it? What other easily-available references are recommended?
>
>Mike, KK6GM

Books of the "Active Filter Cookbook" genre (just bought a copy at the
flea market over the weekend!) tend to recommend circuits such as
Sallen-Key negative feedback which require a gain bandwidth product
in the op amps proportional to a constant times Q^2 times the center frequency.
An RTTY mark filter at 2125 Hz. with a Q of say 25 yields a required
bandwidth of the constant times 1.2 MHz. The constant is typically 9
which gives you over 10 MHz., and that's the minimum. Operating just
over the minimum makes the circuit extremely sensitive to the op
amp temperature and voltage and in any case, it will have to be
trimmed back to the right frequency and Q. You really should be
using something like an OPA620 with 200 MHz. GBW product. Some
designs also have problems with magnifying component value errors,
where a 1% resistor error will move the center frequenc
10% or more. Another problem is spread of component values.
Many popular designs have a spread of 9Q^2,
meaning for a Q of 10, the biggest capacitor is 900 times the
smallest one.

I guess in summary I would say that building filters is harder than
it looks in the books if the Q is more than 2 or 3, and even that
Q may be non trivial if the frequency is very high.

Rick N6RK
rkarlqu@scd.hp.com

2317. 2N6844 & 2N8844

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 21:40:06 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <32rbnm$lm0@dawn.mmm.com>
Source record: 116554
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Any information would be appreciated. Even my book doesn't list these particular 2N's.

--

2318. Re: TNC construction article

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 21:48:08 UTC
From: myers@Eng.Sun.COM
Message-ID: <32rc6o$e5u@abyss.West.Sun.COM>
Source record: 116555

In article BSoranno@vax2.winona.msus.edu, <BSoranno@vax2.winona.msus.edu> writes:
>Does anybody know of a construction article for a "general purpose" TNC?
>
>These are my reguirements:
>1) Standard serial connection. (I have 4 different computers and would like
> to be able to connect to all).
>
>2) An internal processor of some type to minimize the overhead on the
> computer.
>
>If these are too strict, please let me know.
>Thanks.

Well, I haven't seen any kits or construction articles exactly. But the
TAPR TNC-2 bare PC board and the excellent manual and circuit charts
that come with it are, last I heard, available from TAPR for $40. No,
not cheap, but a nice PCB. The TNC-2 has been a defacto standard,
it uses a Z-80 CPU and Z-80 SIO/0. If you build it up with new CMOS
parts and all, you'll probably spend as much $$ buying a KPC-3.
However, you'll learn a lot and it is quite functional. The TNC-2
uses a Exar XR-2211/2206 chipset for the modem, you could leave this
off and build your own modem using a TCM3105, Am7910 or 73K302, all of
these have the advantage of crystal controlled tones rather than the
XR-2206 variable resistor method.

You can also roll your own; design a Z-80 CPU with Z85C30 SCC and 32k
each of ROM and RAM, and build it, and write the software. Yeah, it sounds
daunting, but you'd learn *everything* about AX.25 packet in the real world.
For a modem, the TCM3105 is a popular 1200 baud modem with low current drain.
The SSI 73K302 (I think) is a nice Bell 202/103 modem, but it requires more
effort to interface than the TCM3105...

Have fun!

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Sir, over there.... is that a man?" *

2319. Re: Current Capacity?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 22:19:23 UTC
From: lgenco@crl.com
Message-ID: <32re1b$hjb@nntp.crl.com>
Source record: 116552

In article <32qvql$pc5@news.iastate.edu>,
kenman@iastate.edu (Kenneth D Anderson) wrote
>
> Could someone please email the current capacity of 24 AWG copper wire
> (stranded). It will be used at 13.8V.

From "Handbook of Electronics Tables and Formulas", Howard W. Sams

26 AWG copper wire, recommended current ratings (continuous duty)
Circular mils: 254.1
Resistance per 1000 ft (100deg C): 45.2
Maximum current: Free air: 2.2 amps
Confined: 1.3 amps (confined=bundle of 15 or more wires)

[no distinction was made between solid and stranded wire]

Lou

Internet: lgenco@crl.com Lou.Genco@LChance.sat.tx.us
Ham Radio Packet: N5SGL @ K3WGF.#SAT.TX.USA tcp/ip: n5sgl@sat.ampr.org
---

2320. TNC project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-16 22:48:13 UTC
From: mgalatz@panix.com
Message-ID: <mgalatz.1127464933E@198.7.0.1>
Source record: 116556

Are there any schematics for a TNC for decoding RTTY through a Mac?

2321. Re: Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 00:39:04 UTC
From: tomb@lsid.hp.com
Message-ID: <CunLt4.5HB@hpcvsnz.cv.hp.com>
Source record: 116557

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: In article <493@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:

: >I'd like to hear more from those in the know on this subject. No
: >commercial gear still uses audio LC filters, does it? Is the TL071
: >series good enough for reasonable results (I've settled on these for
: >generic experimenting). I've got the "Active Filter Cookbook", how
: >good is it? What other easily-available references are recommended?
: >
: >Mike, KK6GM

: Books of the "Active Filter Cookbook" genre (just bought a copy at the
: flea market over the weekend!) tend to recommend circuits such as
: Sallen-Key negative feedback which require a gain bandwidth product
: in the op amps proportional to a constant times Q^2 times the center frequency.
etc, noting that the required bandwidth of the amps gets pretty large,
and the component sensitivity can be very poor.

There are other circuits that do a lot better. Have a look at state
variable filters. However, you'll end up using lots of parts to
implement much of a filter: a couple good caps, some resistors,
three or four op amps, and support stuff like bypass caps, just for
a pole pair. You can also get into switched capacitor filters,
which often are state-variable configuration for the general-purpose
ones; you can also get high-order lowpass filters in small packages
that require few support parts. Aliasing is a problem, as is noise
if you want it really quiet, though you can do better than 60dB
fairly easily.

But if you want much of a filter, I'm convinced that DSP is the way
to go: A stereo A/D-D/A chip and a DSP and PROM and darned little
else will do a very nice job. The DSP code can take a bit of time
to get right, but you end up with a filter that stays put. You
have to be careful about keeping enough bits around: sometimes
double precision is required to prevent strange limit cycles. But
for example, I'm currently doing 32 poles of filtering, all
double precision, on a 20kHz bandwidth signal (digitized at about
45k samples/sec), with an inexpensive DSP with time left to do
some other calcs as well. Could probably do 40 poles if that was
all that was required. This is on a credit-card sized board.
The filter cutoffs are configurable. Really tough to do with
op amps in that size, and forget about approaching the DSP
stability and accuracy.

2322. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 02:09:51 UTC
From: jonk@netcom.com
Message-ID: <jonkCunq0G.8n1@netcom.com>
Source record: 116558
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

Small amounts of power can be conveyed optically.

Jon

2323. Re: Quadruple Sideband?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 04:38:14 UTC
From: mzenier@netcom.com
Message-ID: <mzenierCunwvq.F9M@netcom.com>
Source record: 116561

Bruce Toback (btoback@netcom.com) wrote:
: In article <1994Aug10.132958.5539@atd.rochester.ny.us> al@atd.rochester.ny.us (Al Davis) writes:
: >FM stereo is time division multiplexed.

: ?? I thought FM stereo was frequency-division multiplexed, with a 38 KHz
: subcarrier carrying an L-R signal added to the baseband L+R signal.

They're actually the same thing (minus the pilot tone). If you alternate the two audio channels so that each side gets 1/2 * 1/38000 second, the ripple between the left and right comes out equivalent to a DSB modulated 38 kHz signal. Coming up with the necessary low pass filter that didn't mess it up could be nontrivial.

Mark Zenier mzenier@netcom.com mzenier@eskimo.com

2324. Re: Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 08:41:21 UTC
From: cph@zurich.ai.mit.edu
Message-ID: <CPH.94Aug17044122@kleph.ai.mit.edu>
Source record: 116563

In article <493@ted.win.net> mjsilva@ted.win.net (Michael Silva) writes:

I'd like to hear more from those in the know on this subject. No commercial gear still uses audio LC filters, does it? Is the TL071 series good enough for reasonable results (I've settled on these for generic experimenting). I've got the "Active Filter Cookbook", how good is it? What other easily-available references are recommended?

Mike, KK6GM

If you want to build cheap, good performance audio filters, I think you should consider the various switched-capacitor filter chips. For example, National Semiconductor makes several different chips of this kind, all for very reasonable prices, that are very easy to use and require only a few external parts. Last year I built an 8th order bandpass filter using these chips (from a QST article). The filter performs better than any active audio filter I have heard, and the cost was very reasonable: an active filter would have cost about the same and perhaps not performed as well.

On the other hand, if you're willing to spend a little more money, I agree with the person who said DSP is the way to go. DSP audio filters are unbeatable by any other technology, and additionally a DSP filter can implement other KINDS of filters that can't be (practically) implemented in non-digital hardware: such as the adaptive filters that do such a nice job eliminating heterodynes and noise.

Chris K8SH

2325. Re: IC-751A HF Transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 09:00:27 UTC
From: keith@radio.nl.nuwc.navy.mil
Message-ID: <keith.35.0009023A@radio.nl.nuwc.navy.mil>
Source record: 116564
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <eaim084-1408941503350001@fl08ara003.comm.mot.com> eaim084@email.
mot.com (Steve Carlton) writes:
>A friend of mine had a similar experience with a HW-101 which was sitting
>in a garage in Florida for many years. It was full of dirt and cobwebs. He
>took all the tubes out and put it in a dishwasher and washed it then
>rinsed several times. After drying, he replaced all the tubes, cleaned the
>volume control, etc and the unit fired right up. Don't know if this will
>work for you, but it did for WB4ZZB.

I seem to recall this method of cleaning was discussed at some point in
one of the ham radio newsgroups. I think someone pointed out that some
kinds of dishwasher-type soap can be harmful. I don't recall whether it
attacked components on the circuit boards or what it did. Maybe someone
else remembers what the problem was. Something to think about though.

Maybe plain water in the dishwasher (no soap) is "safest". I put "safest"
in quotes because this method is certainly not safe if your wife
catches you putting radios in the dishwasher! ;^)

Keith
---
keith@radio.nl.nuwc.navy.mil

2326. Where can I find RG-302 & RG-303 ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 14:53:52 UTC
From: Tom WB7ASR <tom_boza@ccm.hf.intel.com>
Message-ID: <32t97o$h80@chnews.intel.com>
Source record: 116565
Cross-posted to: sci.electronics,rec.radio.swap,rec.radio.amateur.swap,rec.radio.amateur.space,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.antenna

Im rebuilding the phaseing delay lines for my KLM amateur satellite yagis and need to located a source to acquire about ten feet of RG-302 75 ohms and ten feet of RG-303 50 ohms, teflon coax cable.

RG-302 & RG-303 both have teflon dielectric and a silvered copper shield, both have inner conductors of silver-plated copper-plated steel. They are designed for high-temperature operation. I suspect they were selected by the antenna manufacturer because of low temperature coefficients. I don't want to use Radio Shack 75 ohm TV cable.

Different velocity factors between teflon and polyethylene.

polyethylene = 66.5% teflon = 69%

KLM sells the complete phaseing kit replacements for $49 each, however I feel I should be able to replace just the coax for at least half that price.

If anyone knows of a source for RG-302 & RG-303, please post here or reply via eMAIL direct.

Thanks and 73s,
Tom - WB7ASR... (not speaking for Intel)

tom_boza@ccm.hf.intel.com

2327. Re: Current Capacity?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 15:15:38 UTC
From: btoback@netcom.com
Message-ID: <btobackCuoqE2.30v@netcom.com>
Source record: 116566

In article <32qvql$pc5@news.iastate.edu> kenman@iastate.edu (Kenneth D Anderson) writes:
>I've looked all over and can't find it. Is there a data book that has
>information for "small" circuit components?

I don't have it handy, but this information is in the ARRL Handbook.

-- Bruce KN6MN

2328. Re: Active Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 16:07:46 UTC
From: 00tlzivney@bsuvc.bsu.edu
Message-ID: <1994Aug17.110746.32925@leo.bsuvc.bsu.edu>
Source record: 116567

It's been over 15 years since I've designed any active filters, but I seem to recall that the voltage across the feedback elements will be multiplied by the Q of the network. This implies that a high-Q section will of necessity have a limited dynamic range. For example, many of us would consider an input audio level of 1 v rms "ok", yet when one factors in the peak-to-peak levels times the Q of the section, we see that limiting is sure to occur with +/- 15 volt supplies on the op amp. This would be worse with 9 volt batteries, or single polarity configurations.

Just my two cents worth.

Terry Zivney, N4TZ
00tlzivney@bsuvc.bsu.edu

2329. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 17:02:45 UTC
From: hbrown@nadir.resd
Message-ID: <1994Aug17.170245.19082@knight.vf.ge.com>
Source record: 116618

The older ARRL Handbooks should be a good source for higher power tube amplifiers. Try your local library or one of the "older" hams in your area. There have been conversion articles for the Heath SB220 to 6 meters (2 3-500Z's), also 8930's for 400 to 500 watts out.

73,
Harry, W3IIT

reply to hbrown@resd.vf.ge.com

2330. Re: Motorola RF Data Handbooks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 17:34:30 UTC
From: lovelace@analog-design.sps.mot.com
Message-ID: <1994Aug17.173430.16267@newsgate.sps.mot.com>
Source record: 116619

Call your local sales office and request a copy. Or you can call the Motorola Literature Distribution center (they will charge you $, while the sales office will not), their number is: (602) 994-6561.

| David K. Lovelace 2100 East Elliot Road |
| Motorola, Inc. MD: EL368 |
| Semiconductor Products Sector Tempe, AZ 85284 |
| Analog IC Division lovelace@analog-design.sps.mot.com |
| Phone: (602) 413-5878 FAX: (602) 413-4192 |

2331. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 18:18:03 UTC
From: landisj@drager.com
Message-ID: <1994Aug17.141803.132@drager.com>
Source record: 116622

In article <CuK7H6.6sr@utnetw.utoledo.edu>, pouelle@uoft02.utoledo.edu writes:
> In article <5QyTM9i.mstrand@delphi.com>, mstrand@delphi.com writes:
>>Ben Slagle <aq760@yfn.ysu.edu> writes:
>>
>>>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>>>like it to be in the area of 10 watts... nothing fancy, just a
>>>n amplifier I can make for cheap. Thanks.
>>
>>Hi Ben,
>>If you can find an old tube type low band (40 - 50 mHz) two way radio,
>>Motorola, GE, etc, the final amp could easily be moved to 6m. These are
>>class C amps however if that will work for your application. Ham swap meets
>>are generally a good place to find these type radios.
>>
>>Good luck!
>>Mike
>
> If you wanted a 10w solid state amp, you could base it on the 2sc3133. ICOM
> uses it in an older 6m rig (IC-505) and the transistor is not too expensive.
> The ICOM rig is an all mode and with that transistor puts out about 10w
> from a 12V supply.
>
> Patrick

I don't understand the tube requirement. At this power level a transistor amp is a natural. It would be much more expensive to build a tube amp, considering power supplies, etc... 12V supplies are cheap. How about an older solid state low band rig. Pull a class C amp off of a Mocom/Micor/MastrII - it could be easily moved to 6M. You would end up with anywhere between 5-100 watts, depending on model. Get one at a hamfest near you for $20, maybe? Get a service manual, and have fun.
Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WA3TSW.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

2332. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 18:30:14 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-1708941430140001@128.159.123.111>
Source record: 116620
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <776791198snz@arkas.demon.co.uk>, Michael@arkas.demon.co.uk wrote:
> In article <32c5hi$mtg@ohlone.kn.PacBell.COM>
> jlundgre@news.kn.PacBell.COM "John Lundgren" writes:
> > Regenerative receivers never had and never will have selectivity as good
> > as the superheterodyne receivers. That's why the superhet became so
> > popular.............
>
> Actually, that's something else I've been wondering about. Just how good are
> ceramic IF filters these days....?

Michael & John-

My first Ham receiver was a Boy Scout Short Wave Set, which was a regenerative receiver using plug-in coils, battery power and one or two tubes. I made a number of contacts on 40 Meter CW using that receiver and a one-tube (6L6) transmitter. Of course you're right about the selectivity. However, what made the regenerative receiver so special, was the amount of gain available without extra stages of amplification. The trade-off was simplicity versus tuned stages.

In actuality, the term, regenerative, refers to the detector. I see no reason why a regenerative detector couldn't be used in a superheterodyne configuration, to take advantage of the selectivity. However, doing so would offer no practical advantage over use of a BFO or product detector, since other stations within the bandpass tend to "pull" the regeneration frequency.

This discussion started with "regenerative sets", which were used for CW. The "super-regenerative" receiver (detector) should also be considered in the discussion. I never understood how they worked, other than regeneration was increased far above the amount used in ordinary regenerative receivers. I suspect they might be useable in a superheterodyne configuration.

I've seen ceramic IF filters and discriminators used in less expensive NBFM communications receivers, including much of the Two Meter Ham gear on the market. Their advantage is that they require no tuning. The only tuning problem might be incorrect impedance matching at either the input or output of the filters, which could cause "ripple" or skew the shoulders of the bandpass curve. They are usually considerably smaller than equivalent LC filters, and cheaper than crystal filters.

One drawback of ceramic IF filters, is that the ultimate out-of-band rejection may not be as good as can be achieved with other filters. It may also have more insertion loss. However, insertion loss isn't usually

a problem with an FM system, where noise figure is determined in the front end, and the detector is preceded by limiter amplifiers.

73, Fred, K4DII

2333. Re: Need TCM3105 ic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 19:27:21 UTC
From: dsnowden@ccd.harris.com
Message-ID: <1994Aug17.192721.1167@ccd.harris.com>
Source record: 116641

Jeff Jones (jeffj@crl.com) wrote:
: Jeffrey Yuan (yuan@phoenix.princeton.edu) wrote:

: : In article <9408100130.AA12423@leo.nmc.edu> David Brodbeck, :
: ai351@leo.nmc.EDU writes: : > : >I need a TCM3105 chip. This is a 16-pin
: 1200 bps half-duplex modem chip : >made by Texas Instruments. I need it
: to build the Poor Man's Packet : >interface. Does anyone know where this
: is available in single : quantities? : >: > : >-- :
: >-=- :
: >ai351@leo.nmc.edu David Brodbeck : > Amateur packet (AX.25):
: N8SRE@wb4vva.#nemi.mi.usa.na
: : >-=-

: : Try JDR Microdevices. I do not have their phone number off hand but they
: : advertise in Byte and Electronics Now. Last time I looked, they were
: : selling the TCM3105 for ~$5.00.

: I looked in their catalog and didn't see it. Do you know of any other
: sources?

: --
: jeffj@crl.com | If work for a living and think the Republican party is your
: AB6MB | friend. Ask Republican congressmen if they ever would side
: | with labor over business. Then watch them laugh in your face!
:

Call them. Thats what I did. They had a few then. If you can't find one
I have a new one I got from them - but more than $5.00. I think I paid
$14 or $15.

--

| Doug Snowden |
| N4IJ |
| email: drs@ccd.harris.com |

2334. need 16 to 18 vac xformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-17 21:45:14 UTC
From: dakota@ccwf.cc.utexas.edu
Message-ID: <32u0da$jcq@geraldo.cc.utexas.edu>
Source record: 116621

need 15 to 20 vac xformer @ approx 5-15 amps.

richard

2335. WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 00:01:28 UTC
From: rflukes@silver.cs.umanitoba.ca
Message-ID: <32u8co$ima@canopus.cc.umanitoba.ca>
Source record: 116623

I am trying to find a source for the Signetics NE604 or the equivalent
SA604 to build a project which appeared in QST about one year ago.
I have already tried all of the parts suppliers which advertise in QST
and have had absolutely no luck. I only need 1 or 2 of these to build
this project. Does anyone know where I could purchase these?

Any help appreciated.

Thanks,
--Rich, VE4AIV
--
Richard F. Lukes rflukes@silver.cs.UManitoba.CA
Computer Science Department
University of Manitoba HOME: (204)-257-6701
Winnipeg, Manitoba CANADA WORK: (204)-474-8696

2336. ATTN PAUL COOPER RE: TERMAN's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 00:26:56 UTC
From: T230579@UNIVSCVM.CSD.SCAROLINA.EDU
Message-ID: <1701511F90S85.T230579@UNIVSCVM.CSD.SCAROLINA.EDU>
Source record: 116624
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Well Paul, I hope you get to read this. I have been waiting excitedly for about ten days for Terman's book to arrive. I thought that maybe you were waiting for the check to clear, maybe mail transfer from Canada to the U.S. is slow, I just didn't know. But you know why the book never made it don't you? It's because you never got the money!!!

I know this because I got the letter back today for INSUFFICIENT POSTAGE! It is postmarked Aug 9, 1994. Just another aspect of the U.S. snail.

I will take the letter to the post office tomorrow to maKE sure that I get it r right this time. Also, sorry for posting here, but I have lost your e-mail address. I would really appreciate it if you would send it to me again...

Thanks for your patience, and sorry for the mix up,

Dan Kline <t230579@univscvm.csd.scarolina.edu>

2337. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 02:10:29 UTC
From: rkirk1@umbc.edu
Message-ID: <32uful$io0@news.umbc.edu>
Source record: 116667
Cross-posted to: alt.2600,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <32ggg8$hsh@hollywood.cinenet.net> maustin@hollywood.cinenet.net (Mark Austin) writes:
: >
: >I had an idea. How about linking up a GPS with a cellular phone and
: >a large battery to power both for a couple of days. Then dial a number
: >on the cellular where you want the GPS to send it's location info and
: >drop the whole bundle into someone's car. Since GPS info can be used
: >with several very cheap street mapping systems (Delorme for one) you'll
: >be able to sit at home and watch them driving down the street on
: >your home computer. Should be able to do this cheap. A couple of
: >hundred dollars (with cheap GPS and cheap phone). I have no ideas
: >on keeping cellular costs down though. One thought would be to set
: >the phone to answer and power up the whole gizmo and then shut down
: >after a call is placed into it. You wouldn't get a continuous
: >signal but you'd be able to find where someone is on demand (if they're
: >within cellular calling range). Such a setup could last for a LONG
: >time with the proper battery.

: You aren't going to be able to get a GPS and cell phone for a couple
: hundred dollars. The cheapest GPS receivers are around $400, and so
: are cell phones unless you roll their cost into a long term service
: contract. And monthly and per minute cell phone charges will mount
: up fairly rapidly. By using packet radio, amateur or commercial,
: you can send position updates on a regular basis without incurring
: quite as much cost.

: DeLorme Mapping and City Streets are a couple of commercial map
: systems that work with GPS. However, APRS (Automatic Packet Reporting
: System) is in some ways better. While it lacks the friendly user
: interface of the commercial products, and it's pre-made map databases
: are skimpy, you can make your own maps, and it works with local and
: remote GPS receivers (using packet UI frames for the latter). It also
: supports other information about the remote sites such as range and
: bearing data from DF equipment, and arbitary text messages.

: However, what many of us want is *differential* GPS. The Coast Guard,
: FAA, and others send out position deltas from a fixed benchmark
: receiver that are received and used to correct the reading of the local
: GPS receiver. These transmissions are either at MF or VHF depending on
: the system. A special receiver is required, and either a GPS receiver
: designed to work with differential signals, or a PC that can take the
: timestamped position reports and reconcile them via software, is used
: to give a true position. This method removes the deliberate SA jitter,

: and other error sources such as varying atmospheric propagation factors,
: from the position data. This allows much greater precision in determining
: location than raw GPS alone.

: It would be nice if the APRS author would support this mode in his
: software. Some of us are willing to set up benchmark receivers on
: the amateur bands. That timestamped data could be used to correct
: the positions reported by the rover receivers over packet.

: Gary
: --
: Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
: Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
: 534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
: Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

This has already been done on an experimental basis here in the Annaoplis
area: A cooperating ham otransmits a differential signal on the same
freq as the APRS net. Receive it thru your TNC and it goes into the
GPS receiver. Works fine.

(Wierd trouble with a missing letter - regrets)

Bob
ht os

2338. Silver Eagle Wiring Diagram

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 04:50:36 UTC
From: smalley@pilot.njin.net
Message-ID: <Aug.18.00.50.35.1994.4139@pilot.njin.net>
Source record: 116625

Hello,

Does anyone know what the pin configuration is for the
connector on an Astatic Silver Eagle microphone? I'm planning to
modify mine for use as a desk mike with my 2m radio, but unfortunately lack
the pinout diagram. Any assistance will be greatly appreciated.
Replies can either be posted to this newsgroup or sent to me directly.

My address is: smalley@pilot.njin.net

Thanks in advance,

John V. Smalley

N2WWN
--
"Imagination is more important than knowledge." - A. Einstein

2339. 50 watt amp for six meter(schems).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 10:41:40 UTC
From: fdugas@halcyon.com
Message-ID: <fdugas.5.000AB1C8@halcyon.com>
Source record: 116633

I am looking for schematics for a medium power amp for six meters. I am looking for clean signal power. since I live in a apartment, I thought a tube amp would be better. Anyone have any good stories to tell? thanks
73's Fred N7SXK

2340. e-mail address in text of messages

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 13:10:26 UTC
From: mack@mails.imed.COM
Message-ID: <9407187772.AA777223127@mails.imed.com>
Source record: 116626

It seems that I have started a new thread of discussion. I had made the plea that those wanting e-mail returns include an e-mail address in the text of the message. I now know why!

Some of us read the news groups only in digest form (i.e. we get a big glob of messages as one mail message). The software that does the digesting sometimes removes the sender's address. I have seen several people's messages whose last entry in the routing is not-for-mail@network.ucsd. This is obviously not very helpful in replying to someone!

Of course, those of you who get the messages directly don't have this problem in making direct replies.

Ray
WD5IFS
mack@mails.imed.com

2341. Answer to 88mH toroid availability

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 14:01:25 UTC
From: mack@mails.imed.COM
Message-ID: <9407187772.AA777226459@mails.imed.com>
Source record: 116629

While I was at the local electronics store I saw some 88mH toroids made by Amidon. I was really surprised to see a BRAND NEW 88mH coil. The only ones I had ever seen before were surplus. Anyway here is the address from their ad in QST:

Amidon Associates
2216 E. Gladwick St.
Dominguez Hills, CA 90220

(310)763- 5770

You may be able to find them locally too!

Ray
WD5IFS
mack@mails.imed.com

2342. Re: Where can I find RG-302 & RG-303 ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 14:08:34 UTC
From: anto@gate.net
Message-ID: <32vq12$j43@tequesta.gate.net>
Source record: 116627
Cross-posted to: sci.electronics,rec.radio.swap,rec.radio.amateur.swap,rec.radio.amateur.space,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.antenna

Tom WB7ASR (tom_boza@ccm.hf.intel.com) wrote:

: Im rebuilding the phaseing delay lines for my KLM amateur satellite yagis and
: need to located a source to acquire about ten feet of RG-302 75 ohms and ten
: feet of RG-303 50 ohms, teflon coax cable.

: RG-302 & RG-303 both have teflon dielectric and a silvered copper shield, both
: have inner conductors of silver-plated copper-plated steel. They are designed
: for high-temperature operation. I suspect they were selected by the antenna
: manufacturer because of low temperature coefficients. I don't want to use Radio
: Shack 75 ohm TV cable.

: Different velocity factors between teflon and polyethylene.

: polyethylene = 66.5% teflon = 69%

: KLM sells the complete phaseing kit replacements for $49 each, however I feel
: I should be able to replace just the coax for at least half that price.

: If anyone knows of a source for RG-302 & RG-303, please post here or reply via
: eMAIL direct.

: Thanks and 73s,
: Tom - WB7ASR... (not speaking for Intel)

: tom_boza@ccm.hf.intel.com

Nemal Electronics in Miami, FL will do mail order. I don't
have the number but 1(305)555-1212 should get you the number.

Nigel, N4TKC

anto@gate.net

2343. Re: WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 14:15:50 UTC
From: anto@gate.net
Message-ID: <32vqem$j43@tequesta.gate.net>
Source record: 116628

Richard F. Lukes (rflukes@silver.cs.umanitoba.ca) wrote:
: I am trying to find a source for the Signetics NE604 or the equivalent
: SA604 to build a project which appeared in QST about one year ago.
: I have already tried all of the parts suppliers which advertise in QST
: and have had absolutely no luck. I only need 1 or 2 of these to build
: this project. Does anyone know where I could purchase these?

: Any help appreciated.

: Thanks,
: --Rich, VE4AIV
: --
: Richard F. Lukes rflukes@silver.cs.UManitoba.CA
: Computer Science Department
: University of Manitoba HOME: (204)-257-6701
: Winnipeg, Manitoba CANADA WORK: (204)-474-8696

Try DC Electronics. They're in Scottsdale, AZ.
The number is (800)467-7736 or (800)423-0070.
Their fax number is (602)994-1707.
They have a small but good selection of stuff for the radio
experimenter. No affiliation.

Nigel, N4TKC

anto@gate.net

2344. VFO drift questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 14:46:51 UTC
From: randolph@est.enet.dec.com
Message-ID: <330a7b$iq3@mrnews.mro.dec.com>
Source record: 116634

I'm building a 40m copy of W1FB's "universal VFO" as seen in QRP Notebook. I have the actual oscillator itself running, no buffer stages yet. About how much drift can I expect out of one of these before I get it closed up in some kind of box? I found that I can blow on it and get it to drift by a couple of hundred Hz, presumably due to cooling/heating...

Description for those without the book: Hartley osc., #6 material toroid and NP0 caps, MPF102 JFET with 9V supply regulated by a Zener. I cheated a bit and used a cheapo trimmer cap in the osc. (Mouser's "6mm snap-in mount", listed as N750). Should I fork over the $3 for the air trimmer?

-Tom R. N1OOQ randolph@est.enet.dec.com

2345. Re: 4-1000 Homebrew Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 14:57:06 UTC
From: ells22@aol.com
Message-ID: <32vss2$78i@search01.news.aol.com>
Source record: 116630

Thanks for the response to my inquiry about passive grid circ uits for 4-1000 Amp. I even found some parts I needed. The project is moving forward slowly with much work on the Power Supply...using a LARGE Powerstat in the primary for max control of voltage and another Powerstat in the screen voltage supply .

I will let all know how it works and will look for any further comments on the DXo-all and be-all project.

73 Russ WA6CWV..Boise, Idaho

2346. RE: Current Capacity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 17:05:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E539625@msmail.uthscsa.edu>
Source record: 116631

Ken writes:

>Could someone please email the current capacity of 24 AWG copper wire
>(stranded). It will be used at 13.8V.
>
>I've looked all over and can't find it. Is there a data book that has
>information for "small" circuit components?
>
>Thank you, Ken

Ken,
If you have the ARRL Handbook, look under Component Data for
such things. 24 AWG wire (solid) can handle about .5 amps so stranded
should be able to handle just under that.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

2347. WANTED: Two 6L6G vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 17:16:53 UTC
From: eckart@athena.mit.edu
Message-ID: <330525$fiq@senator-bedfellow.MIT.EDU>
Source record: 116632

Please reply to: eckart@mit.edu

2348. Re: WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 18:18:48 UTC
From: mjsilva@ted.win.net
Message-ID: <498@ted.win.net>
Source record: 116638

In article <32u8co$ima@canopus.cc.umanitoba.ca>, Richard F. Lukes
(rflukes@silver.cs.umanitoba.ca) writes:
>I am trying to find a source for the Signetics NE604 or the equivalent
>SA604 to build a project which appeared in QST about one year ago.
>I have already tried all of the parts suppliers which advertise in QST
>and have had absolutely no luck. I only need 1 or 2 of these to build
>this project. Does anyone know where I could purchase these?
>
DC Electronics (1-800-467-7736) lists them (for $6.50) in their catalog,
which I just received. They seem to have some neat IC's that most
other places don't carry (or at least don't list).

Mike, KK6GM

2349. Re: 50 watt amp for six meter(schems).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 19:33:14 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.777238394@melpar>
Source record: 116635

fdugas@halcyon.com (Fred Dugas) writes:

>I am looking for schematics for a medium power amp for six meters. I am
>looking for clean signal power. since I live in a apartment, I thought a tube
>amp would be better. Anyone have any good stories to tell? thanks
>73's Fred N7SXK

If you wish, I'll dig back through my old ARRL Handbooks and VHF
Manuals and see what's there; copies are free if I find anything of
potential interest.

I ran P-P 6146Bs on 6 and another pair on 2 during the 1970s,
CW & SSB. Worked as well and seemed as clean as anything else around
at that time. However, a word of warning: My Dad, WA4CVA (now SK)
ran a Clegg Venus which has about as clean a 40-watt signal as ever
I've seen on 6 (I ran spectral measurements on it) and he still had
TVI problems; front-end overload and "rusty bolt" effect on a TV
across the street from him with a crappy, unmaintained antenna and
an old, unmaintained set; and cable TV interference two blocks (!)
away because the cable company used unshielded amplifier housings.

The point is, a very clean amplifier does not guarantee that
you won't still have problems with TVI. But, it's a necessary first
step, IMHO, so your concern is commendable.

(|_|) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
| |) Principal Systems Engineer Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from
around it....." - anonymous radiotelegraph operator

2350. Re: Motorola RF Data Handbooks

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 20:38:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <18AUG199415380995@pavo.concordia.ca>
Source record: 116636

In article <1994Aug17.173430.16267@newsgate.sps.mot.com>,
lovelace@analog-design.sps.mot.com writes...
>Call your local sales office and request a copy. Or you can call the Motorola
>Literature Distribution center (they will charge you $, while the sales office will
>not), their number is: (602) 994-6561.
>
>
>---
>| David K. Lovelace 2100 East Elliot Road |
>| Motorola, Inc. MD: EL368 |
>| Semiconductor Products Sector Tempe, AZ 85284 |
>| Analog IC Division lovelace@analog-design.sps.mot.com |
>| Phone: (602) 413-5878 FAX: (602) 413-4192 |
>---
>

In the latest (September) issue of Electronics Now, in the New Lit section,
it mentions that the new version of the RF Devices Data Book is available from
the Literature Distribution Centre for FREE *AND* there is an 800 number too!.
Of course, the 800 number is useless if you are calling from Canada :-(
For those of you south of the border, the number is 800-441-2447. I faxed my
request (57 seconds) to (602) 994-6430.

Good luck

de VE2HVW

2351. Re: 50 watt amp for six meter(schems).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 22:19:06 UTC
From: zardoz@ornews.intel.com
Message-ID: <330mpb$ajj@ornews.intel.com>
Source record: 116640

In article <phb.777238394@melpar> phb@syseng1.melpar.esys.com (Paul H. Bock) writes:
>fdugas@halcyon.com (Fred Dugas) writes:
>
>>I am looking for schematics for a medium power amp for six meters...

> If you wish, I'll dig back through my old ARRL Handbooks and VHF
>Manuals and see what's there; copies are free if I find anything of
>potential interest.

Also check old copies of Ham Radio magazine. I have an old 826 tube that
came out of an ultrasonic cleaner that will put out 90 watts up to 150Mhz.
Specs for it are in the old Handbooks. The trick is to find a design that's
close to what you want and then modify it to match what's available.

>My Dad ran a Clegg Venus which has about as clean a 40-watt signal as ever
>I've seen on 6 (I ran spectral measurements on it) and he still had
>TVI problems;...

Wow, I'll bet that's a rare radio! I have a Clegg 99'er and used to have
a Clegg 66'er but they both are runts compared to 40 watts. How many
different 6 meter models did Clegg make?

--
zardoz@ornews.intel.com WA7LDV Leave it to the BEAVER state
I speak only for myself. <<< OREGON >>>

2352. DSP filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 23:44:40 UTC
From: jpcarlie@vub.ac.be
Message-ID: <330rp8$j1u@rc1.vub.ac.be>
Source record: 116639

Could anyone reading this recommend me a good practical (ham wise)
introduction to DSP: books, development kits,...

Of course if it was available on the net... let me know where.

Thanks
73
ONL6486
(Using someon else account: I have no access to the news otherwise)
Marc Delince E-Mail: delinm@nsco.network.com

2353. Circuit suggestions for a 6L6 metal cased valve

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-18 23:46:32 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cur8pK.2G0@cix.compulink.co.uk>
Source record: 116637

Circuit suggestions for a 6L6 metal cased valve

I have aquired an old, but working 6L6 valve and would appreciate a usefule circuit diagram to use it.

I was thinking of a regenerative reciever or QRP transmitter. Any suggestions?

The valve is metal cased.

oddjob@cix.compulink.co.uk

2354. XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 02:56:31 UTC
From: wwg@coutts.UUCP
Message-ID: <300@coutts.UUCP>
Source record: 116651
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc

In article <keith.35.0009023A@radio.nl.nuwc.navy.mil> keith@radio.nl.nuwc.navy.mil (Keith Kanoun) writes:
>In article <eaim084-1408941503350001@fl08ara003.comm.mot.com> eaim084@email.
>mot.com (Steve Carlton) writes:
>>A friend of mine had a similar experience with a HW-101 which was sitting
>>in a garage in Florida for many years. It was full of dirt and cobwebs. He
>>took all the tubes out and put it in a dishwasher and washed it then
>>rinsed several times. After drying, he replaced all the tubes, cleaned the
>>volume control, etc and the unit fired right up. Don't know if this will
>>work for you, but it did for WB4ZZB.
[...]
>Maybe plain water in the dishwasher (no soap) is "safest".
[...]
>keith@radio.nl.nuwc.navy.mil

If it has any plastic parts, be very careful. At the end of the wash, many dishwashers turn on a heating element that has ruined many a plastic article in ours. Since a HF rig is not something you casually put in the dishwasher and go watch TV, I suppose this is not too much of a problem to remember to remove it!

I would think that meters might suffer from leakage and water moisture build up.

But then again, as in some equipment, if you have nothing to lose, then why not. I know some people that have disassembled hard disks in their "non-clean" basements, and put them back into service successfully. So, who knows whether a gamble pays off or not?

Actually, come to think of it... why not put the TUBES in the top rack? Get them all nice and spiffy clean... they're least likely to suffer from it, assuming they can't move much!

- * -

I can just imagine what my XYL's reaction would be... opening the dish washer and pulling out the top drawer full of tubes (snicker)...
...then pulling out the bottom drawer with the old boat-anchor (rig) sitting on it!!!

Then the side tray where the silverware normally goes, I could leave my favourite pliers, screwdrivers, and open-end and box-end wrenches.

Ah... that would be fun... even if it meant the dog house for a week.
A Kodak moment... good footage for America's funniest videos.

Warren W. Gay VE3WWG John Coutts Library Services Limited
wwg@coutts.UUCP Niagara Falls, Ontario, Canada
(or wwg%coutts@uunet.ca, wwg%coutts@uunet.uu.net)

2355. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 03:45:02 UTC
From: jacobl@magnus1.com
Message-ID: <CurJr3.1L4@magnus1.com>
Source record: 116648
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

u1066579@csdvax.csd.unsw.edu.au writes:
> I am interested in how I can supply power to a circuit without the need
> for any physical contacts. I thought that I could have two coils. One would
> be connected to an AC source (the transmitting coil), the other coil (the
> receiving coil) would be connected to my circuit. I would then have a bridge
> rectifier on the output from the "receiving coil" to provide DC for the
> circuit.
> Can someone tell me if this is practical? How should I go about constructing
> the coils? Are there any references anyone know of on "wireless"power
> supplies?
>
I designed and built a waterproof flashlight with a recharging circuit that
was powered by induction. The charger was a transformer coil squashed flat,
with the secondary coil removed. The transformer was originally a 120 to 12
volts. The flashlight was a large 9volt type with a flat base.
In the base was the secondary coil, the diode, and an led with a resistor.
I replaced the switch with 2 magnetic reed switches and sealed it completly
shut. On the outside, a small magnet would slide between charge/off/on.
It had many drawbacks that I would now change. The major one being a
smart charging circuit that would fast charge then trickle. Also, I would
find a better case and not glue it shut.
Unfourtunately, while scuba diving on my mooring, the string on it somehow
became untied. It was swept away in the current. It vanished in seconds
never to be seen again.
.

2356. 1W, 100MHz, Power Amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 07:30:41 UTC
From: lmzamo@uct.ac.za
Message-ID: <lmzamo.1.2E545FA1@uct.ac.za>
Source record: 116642

Does any one know how to design an RF Power Amplifier that operates
at +-100 MHz.

Or at least some information on transistor that operate at 100MHz

Please reply to
LMzamo@Eleceng.uct.ac.za or AGunnoo@eleceng.uct.ac.za

Thanx
Lula...

2357. Re: designing microwave circuits using aplac

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 08:40:56 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994Aug19.084056.29765@ucl.ac.uk>
Source record: 116646

In article 4ts@eagle.natinst.com, klopfer@natinst.com (Mike Klopfer) writes:
>
> I'm wanting to design uhf and microwave circuits for packets radio. Since
> I've not done'designs at these frequencies I was wondering if some persons
> might answer a few questions. Is software like spice much use? Is its
> transistor model any good at >1GHz? What about the aplac simulator? I noticed
> it has lots of microstrip models? Is some kind of network analyzer required
> to do any real design or is there simulation software that is accurate enough
> and in what frequency ranges? What's the quickest cheapest way to fabricate a
> microstrip board? Can some toner transfer methods be used and what
> kind of circuit board material is best?
>
> I bought a tv tuner
> that's suppose to go up to 1700MHz but I couldn't get anything to show up
> on a 1GHz storage oscilliscope when I connecting the tuner to power. I would
> like to find the simplest circuit that can get it to work. I've also got
> a 2GHz prescaler and would like to eventually make a frequency
> generator from these parts.

Devices for this frequency are characterised using S (Scattering) parameters. There is a cheap simulator I use, called 'Puff' developed at Caltech. It distributed at cost by Calctech, Elec Eng dept. You can enter the S-parameters of a device, from a data sheet

Many transistor models require measurements to be made of currents and voltages, as one port is shorted or open circuit. These are not suitable, for a number of reasons.

1) Difficult to measure voltage or current, as the frequecny rises
2) UHF/microwave devices will often (usually) go unstable if you short or open ports.
3) Unstable devices will often self-distruct.

S parameters are all measured with all ports in 50 Ohms (by convention).

Using a program like Puff, I've designed stuff at 2.6 GHz without any network analyser. Trouble is you do need a decent knowledge of microwave theory/transmission lines. The problem with the version I have, is that it cant handle anything to do with noise. You can not see the effect on the noise figure of any changes.

davek

2358. Re: 50 watt amp for six meter(schems).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 09:01:53 UTC
From: jdow@BIX.com
Message-ID: <jdow.777286913@BIX.com>
Source record: 116643

zardoz@ornews.intel.com (Jim Garver) writes:

>In article <phb.777238394@melpar> phb@syseng1.melpar.esys.com (Paul H. Bock) writes:
>>fdugas@halcyon.com (Fred Dugas) writes:
>>
>>>I am looking for schematics for a medium power amp for six meters...

>> If you wish, I'll dig back through my old ARRL Handbooks and VHF
>>Manuals and see what's there; copies are free if I find anything of
>>potential interest.

>Also check old copies of Ham Radio magazine. I have an old 826 tube that
>came out of an ultrasonic cleaner that will put out 90 watts up to 150Mhz.
>Specs for it are in the old Handbooks. The trick is to find a design that's
>close to what you want and then modify it to match what's available.

>>My Dad ran a Clegg Venus which has about as clean a 40-watt signal as ever
>>I've seen on 6 (I ran spectral measurements on it) and he still had
>>TVI problems;...

>Wow, I'll bet that's a rare radio! I have a Clegg 99'er and used to have
>a Clegg 66'er but they both are runts compared to 40 watts. How many
>different 6 meter models did Clegg make?

>--
>zardoz@ornews.intel.com WA7LDV Leave it to the BEAVER state
>I speak only for myself. <<< OREGON >>>

The only things I found that made high power on 6 more or less doable in a
channel two area were the Drake TV-300 low pass filters. These things cut
off *SHARP* at 52MHz and had sufficient attenuation at 50MHz that a KW SSB
only tossed herringbones on the screen in a medium to high signal level
channel two area in Detroit. The presence or absense of the dual butterfly
resonator filter I had on the PA had little or no effect on channel 2. I did
figure it was a good thing for harmonic reasons, though. (That filter was
so narrow I had to retune it every 100KHz for decent reception and every
25Khz to 50Khz for decent VSWR. Sadly it was one of the things that did not
survive my divorce. {'_`} Whimper!)
{^_^}

2359. Re: Circuit suggestions for a 6L6 metal cased valve

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 09:07:02 UTC
From: jdow@BIX.com
Message-ID: <jdow.777287222@BIX.com>
Source record: 116644

oddjob@cix.compulink.co.uk ("Stephen Walters") writes:

>Circuit suggestions for a 6L6 metal cased valve

>I have aquired an old, but working 6L6 valve and would appreciate a
>usefule circuit diagram to use it.

>I was thinking of a regenerative reciever or QRP transmitter. Any
>suggestions?

>The valve is metal cased.

>oddjob@cix.compulink.co.uk

Dig around in the back recesses of local (and not so local) libraries for
1950's to 1960's era _The Radio Amateur Handbook_ editions. Back then 6L6's,
with liberal parasitic suppression applied, was used for transmitters in the
20-50 watt range. (The memories are so dim I cannot nail it down better, alas.)
{^_^}

2360. Re: Need wide-range VCO circuit for cheap receiver project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 10:43:29 UTC
From: ega066@comp.lancs.ac.uk
Message-ID: <Cus34I.6J6@comp.lancs.ac.uk>
Source record: 116647
Body handling: HTML body converted to readable text

In article vimx writes:
>
> I would like to know if there is a circuit that has the range of a cable
>box VCO. It does not have to be stable (drift is ok). All the varactor
>tuner circuits ive seen have very narrow ranges. I am also thinking of
>building a spectrum analyzer with this VCO and a NE602. The PMSA is too
>expensive for me. And my application does not demand accuracy or even
>calibration.

If you can get your hands on the Motorola data for the MC1648
osc IC, there are a couple of wide-range VCO circuits there,
e.g 10-50MHz and 50-160MHz. Very simple too, though of course
stability and output voltage variation across the range
will leave something to be desired, no doubt! Let me know
if you want further info.

73

Simon G0GWA.

2361. Re: toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 11:30:07 UTC
From: bmitchel@cbatest.kodak.com
Message-ID: <14470@eastman.Kodak.Com>
Source record: 116655

I would wind my own..
88mh,
look up in the ARRL handbook powered Iron cores.
Then the equation to calculate the number of turns for a specific core is
100*sqrt(88uh / Al) Where the value of Al values for each specific core.

Also, the color of the core depicts things like operational freq etc.
You can buy cores from Amidon.. Address, I'm not sure, but they do sell in
small quantities.
Good luck!
Brad WB8YGG

2362. Re: 1W, 100MHz, Power Amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 13:03:16 UTC
From: sct@po.cwru.edu
Message-ID: <332aik$e72@usenet.INS.CWRU.Edu>
Source record: 116649

I can suggest several books: the Motorola _RF Device Databook_,
Solid State Design for the Radio Amateur, and the ARRL _UHF and
Microwave Experimenter's Handbook_.

The first will give you lots of ideas for transistors and RF modules
that can operate at 100 MHz. The test circuits given may be very
helpful as starting points for your own designs. The second is a
general-purpose book on how to design RF circuits. Its sample circuits
are somewhat dated but it is still useful. It does have some discussion
of VHF design, but it does not go into great detail. The third is meant
for 300 MHz and up, but it may be useful anyway. Get it if you want
information on issues like stripline and tuned cavities.

Of the three, the one that will be most useful to you is the Motorola
RF Databook. If there are RF devices that are easier to obtain on
South Africa, get databooks from their manufacturers as well.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2363. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 13:07:35 UTC
From: landisj@drager.com
Message-ID: <1994Aug19.090735.133@drager.com>
Source record: 116654

> In article <CuK7H6.6sr@utnetw.utoledo.edu> pouelle@uoft02.utoledo.edu writes:
>>In article <5QyTM9i.mstrand@delphi.com>, mstrand@delphi.com writes:
>>>Ben Slagle <aq760@yfn.ysu.edu> writes:
>>>>I need a schematic for a small, vacuum tube 6m amplifier... I'd
>>>>like it to be in the area of 10 watts... nothing fancy, just a
>>>If you can find an old tube type low band (40 - 50 mHz) two way radio,
>>>Motorola, GE, etc, the final amp could easily be moved to 6m. These are
>>If you wanted a 10w solid state amp, you could base it on the 2sc3133. ICOM
>>uses it in an older 6m rig (IC-505) and the transistor is not too expensive.
>

Or, how about buying an old Heath DX-60 at a hamfest for $40, gutting it, and
retuning the 6146 final for 6M? Tube smell, about 75Watts.

Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WA3TSW.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

2364. Re: 50 watt amp for six meter(schems).

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 13:09:08 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.777301748@melpar>
Source record: 116650

zardoz@ornews.intel.com (Jim Garver) writes:

>>My Dad ran a Clegg Venus which has about as clean a 40-watt signal as ever
>>I've seen on 6 (I ran spectral measurements on it) and he still had
>>TVI problems;...

>Wow, I'll bet that's a rare radio! I have a Clegg 99'er and used to have
>a Clegg 66'er but they both are runts compared to 40 watts. How many

Not sure, actually. But the Venus was a *very nice* radio and I
wish I had one now. It was large, of course, by today's standards, and
full of tubes on a hand-wired chassis, but it was a very nice 6-meter
transceiver and with the companion Apollo 6-meter linear (500 W?) put
out a VERY respectable signal. Of course, I used it barefoot for a
while with a 2-element quad and had a lot of fun during Es openings.
It had a *nice* Eddystone dial (but no digital readout.....darn! :-)

(|_|) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
| |) Principal Systems Engineer Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from
around it....." - anonymous radiotelegraph operator

2365. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 21:05:03 UTC
From: jmollan@egreen.iclnet.org
Message-ID: <1994Aug19.210503.916@egreen.wednet.edu>
Source record: 116652
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

This idea has been used in the electric toothbrush business for years.
If you will notice their construction, there is no direct metal-to-metal
contact through the plastic.

Good luck

John AE7P

2366. Re: WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 21:25:08 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <777331508snz@lfheller.demon.co.uk>
Source record: 116653

In article <32u8co$ima@canopus.cc.umanitoba.ca>
rflukes@silver.cs.umanitoba.ca "Richard F. Lukes" writes:

> I am trying to find a source for the Signetics NE604 or the equivalent
> SA604 to build a project which appeared in QST about one year ago.
> I have already tried all of the parts suppliers which advertise in QST
> and have had absolutely no luck. I only need 1 or 2 of these to build
> this project. Does anyone know where I could purchase these?
>
> Any help appreciated.
>
> Thanks,
> --Rich, VE4AIV

RS Components (nothing to do with Radio Shack) here in the UK has
them in their catalogue at #6.08. They have distributors in other
countries. Their International Division is on (0536) 201234.

73 de Leon
--
Leon Heller, G1HSM
E-mail: leon@lfheller.demon.co.uk
Tel: +44 (0)734 266679

2367. Re: HELP: Providing power by induction??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-19 23:54:45 UTC
From: scott@csustan.csustan.edu
Message-ID: <1994Aug19.235445.3884@csustan.csustan.edu>
Source record: 116656
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <pomplun-1808941449O9@k2hug.llnl.gov> pomplun@llnl.gov (Don Pomplun) writes:
>
>> > I am interested in how I can supply power to a circuit without the need
>> >for any physical contacts.
>Take apart an Interplak electric tooth brush.
>It has a primary coil charging stand and the thing charges inuctively.

A method of getting 120 volts to tower lights on AM broadcast
antennas is the use of a commercially available "transformer"
that has an ~4-inch gap betwween a "primary" wound around
a toroid and a "secondary" that is a much larger ID coil.
Imagine two ~10-inch diamter rings "meshed" at a 90-degree angle.
It works like any other transformer except for the big air gap.
Not too efficient, but the RF-to-ground isolation is fantastic.

-substation scott

2368. Re: VFO drift questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-20 12:01:16 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <777384076snz@arkas.demon.co.uk>
Source record: 116657

In article <330a7b$iq3@mrnews.mro.dec.com>
randolph@est.enet.dec.com "Tom Randolph" writes:

>
> I'm building a 40m copy of W1FB's "universal VFO" as seen in QRP Notebook.
> I have the actual oscillator itself running, no buffer stages yet. About
> how much drift can I expect out of one of these before I get it closed up
> in some kind of box? I found that I can blow on it and get it to drift by
> a couple of hundred Hz, presumably due to cooling/heating...
>
> Description for those without the book: Hartley osc., #6 material toroid
> and NP0 caps, MPF102 JFET with 9V supply regulated by a Zener. I cheated a
> bit and used a cheapo trimmer cap in the osc. (Mouser's "6mm snap-in mount",
> listed as N750). Should I fork over the $3 for the air trimmer?

Hi Tom

The variation of the VFO's toroidal core with temperature will cause drift -
generally large enough to be annoying! :)

When building oscillators I follow some of the guidelines in "Solid State
Design for The Radio Amateur": don't use iron powder / ferrite cores -wind air-
core inductors if possible; mechanically secure all components, as vibration
will cause drift and FM'ing; and numerous others.

I've used Series-tuned Clapp and Colpitts oscillators as free-running VFO's
with relatively low drift (i.e. without a PLL circuit to stabilise them) -
these can be built to minimise the use of iron powder / ferrite.

To test the drift, use a hairdryer (no kidding!). Observe the frequency
with the dryer alternately set to "no-heat" and "warm" for short periods, and
you'll get an indication of whether the VFO will do what you want, or whether
you wish to try re-designing it.

73's de VK2ENG

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2369. re: Current Capacity?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-20 16:33:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.1739.7584.0NFB2E03@woodybbs.com>
Source record: 116659

In<32qvql$pc5@news.iastate.edu>, Ken Anderson asked:

KE>Could someone please email the current capacity of 24 AWG copper wire
KE>(stranded). It will be used at 13.8V.

The ARRL Handbook's copper wire table lists the capactity of 24 gauge as
0.577 Amps (for 700 circular mils per Amp) which they say is
satisfactory for small transformers.

Art N2AH

2370. Re: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-20 21:18:01 UTC
From: barry@indirect.com
Message-ID: <barry.187.00154D86@indirect.com>
Source record: 116663
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc

In article <300@coutts.UUCP> wwg@coutts.UUCP (Warren Gay) writes:
>From: wwg@coutts.UUCP (Warren Gay)
>Subject: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)
>Date: 19 Aug 94 02:56:31 GMT
>Keywords: radio dishwasher cleaning xyl

>In article <keith.35.0009023A@radio.nl.nuwc.navy.mil>
>keith@radio.nl.nuwc.navy.mil (Keith Kanoun) writes:
>>In article <eaim084-1408941503350001@fl08ara003.comm.mot.com> eaim084@email.
>>mot.com (Steve Carlton) writes:
>>>A friend of mine had a similar experience with a HW-101 which was sitting
>>>in a garage in Florida for many years. It was full of dirt and cobwebs. He
>>>took all the tubes out and put it in a dishwasher and washed it then
>>>rinsed several times. After drying, he replaced all the tubes, cleaned the
>>>volume control, etc and the unit fired right up. Don't know if this will
>>>work for you, but it did for WB4ZZB.
>[...]
>>Maybe plain water in the dishwasher (no soap) is "safest".
>[...]
>>keith@radio.nl.nuwc.navy.mil

>If it has any plastic parts, be very careful. At the end of the wash,
>many dishwashers turn on a heating element that has ruined many a
>plastic article in ours. Since a HF rig is not something you
>casually put in the dishwasher and go watch TV, I suppose this
>is not too much of a problem to remember to remove it!

>I would think that meters might suffer from leakage and water
>moisture build up.

>But then again, as in some equipment, if you have nothing to lose,
>then why not. I know some people that have disassembled hard disks
>in their "non-clean" basements, and put them back into service
>successfully. So, who knows whether a gamble pays off or not?

>Actually, come to think of it... why not put the TUBES in the top
>rack? Get them all nice and spiffy clean... they're least likely
>to suffer from it, assuming they can't move much!

> - * -

>I can just imagine what my XYL's reaction would be... opening the
>dish washer and pulling out the top drawer full of tubes (snicker)...
>...then pulling out the bottom drawer with the old boat-anchor

>(rig) sitting on it!!!

>Then the side tray where the silverware normally goes, I could leave
>my favourite pliers, screwdrivers, and open-end and box-end wrenches.

>Ah... that would be fun... even if it meant the dog house for a week.
>A Kodak moment... good footage for America's funniest videos.

That HW101 would be clean enough to eat off of!
barry

>--------------------
>Warren W. Gay VE3WWG John Coutts Library Services Limited
>wwg@coutts.UUCP Niagara Falls, Ontario, Canada
>(or wwg%coutts@uunet.ca, wwg%coutts@uunet.uu.net)

2371. faisyn20.zip - Electronic Filter Synthesis Program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-20 21:44:34 UTC
From: diviney@sky700.bwi.wec.com
Message-ID: <9408202144.kp14040@SimTel.Coast.NET>
Source record: 116658
Cross-posted to:
comp.archives.msdos.announce,rec.radio.info,sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have uploaded to the SimTel Software Repository (available by anonymous
ftp from the primary mirror site OAK.Oakland.Edu and its mirrors):

SimTel/msdos/electric/
faisyn20.zip Electronic filter synthesis program

FAISYN v2.0 is a low cost, effective alternative to expensive commercial
filter synthesis packages. The program has be used to design lumped
element filters and diplexers from 10's of KHz to 1.5GHz and is the
result of many years experience in filter design. Designers know that
filter design is often an iterative process. Tedious number grinding is
sometimes required to optimize a design. FAISYN eases the burden by
allowing the designer to quickly synthesize a variety of circuits that
can be simulated and compared using your favorite circuit simulator
(FAISYN currently supports PSPICE-TM Microsim, MMICAD-TM Optotek and
TOUCHSTONE-TM HP/EESOF circuit formats).

Special Requirements: None

ShareWare. Author - Kevin Faison

Tom Diviney
diviney@sky700.bwi.wec.com

2372. DME (Dog Measuring Equipment)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-20 23:28:03 UTC
From: paulbreed@aol.com
Message-ID: <3363i3$7qk@search01.news.aol.com>
Source record: 116660

The Problem:
The dog keeps taking off.
It would cost too much to fence our 2 ac. in the woods,
and he usually takes off when the kids get bored throwing the ball for him
etc..
(So he's not on his chain when the kids are throwing the ball etc...)
Any system that worked could also be used to detect kid snaching etc...

The solution:
Devise a system that would tell me when He was leaving the yard.
The dog carried part would have to fit on the collar of an 85lb
dog.
It would be nice if the battery lasted at least a week.

Idea #1
Build a simple Distance measuring system (Pulse and respond)
Alarm when the dog was 300ft +- 50ft from the house.
+-50 Ft is +/- 50 nsec

Idea #2
Build a set of directional antenna that would detect when he left the
defined perimeter. (Two sets antennas on the ends of the yard.)
An array of antennas could also get some distance information from time of
arivals if the dog was within the antenna array.
four antenas on the corners of the yard?
with coax going to a central box??? (Probably too much coax $$$)

Idea #3
Run a wire around the perimeter of the whole property carrying an ac
signal, when the collar detected the signal it would alarm???
I think there is a commercial system like this.

Questions:
1)Any other wild ideas?

2)What are the FCC rules asociated with low power unlicensed radiators?
What Freqs?
What Power Levels?

3)What kind of antenna could be mounted on a collar that would be rugged
and omnidirectional?
What is used in wild animal radio tags?

4)How does the commercial perimeter system work?
What frequency does it operate on?

I hope the ideas were entertaining,

Thanks in advance
Paul Breed
KL7JG

2373. Where to buy kits?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-21 03:02:37 UTC
From: drice@crl.com
Message-ID: <znr777437775k@crl>
Source record: 116661

What are the best sources for kits for amplifiers, receivers,
transmitters, antennas, etc.

Also, where is the best place to find plans for building such things
from scratch? Especially antennas.

Dennis

--

____
Dennis Rice drice@crl.com
NAU Flagstaff Waiting for call sign.

... Alex, I'll take "Things Only I Know" for $1000.
---
* TLX v3.40 *

2374. How to resolder filament pin on 3-1000Z?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-21 03:37:37 UTC
From: dgf@netcom.com
Message-ID: <dgfCuv8qq.7Jx@netcom.com>
Source record: 116662

I have a used 3-1000Z tube which has solder missing from one of it's pins (one of the filament pins). This is making the filament connection intermittent. All of the other pins are OK. Is there a procedure to replace the solder or otherwise fix this problem? I don't want to risk destroying the tube by reheating the pin improperly.

Thanx for any advice!

73 Dave WB0GAZ dgf@netcom.com

2375. help with crystal set?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-21 04:54:01 UTC
From: jimcan@aol.com
Message-ID: <336ml9$cp5@search01.news.aol.com>
Source record: 116664

I have just finished assembling my first crystal radio, and it doesn't work. I'll try to explain my situation, and maybe somebody out there knows of a possible problem?

I'm using a design called Telfunken, if that rings any bells. It involves three coils (,which I have made sure are all wound in the same direction). The first is connected to the antenna and the ground (the antenna is two square feet of 15 loops, I think called a "dipole"? and the ground is a radiator). The second is connected to a variable capaciter, and the third to a diode and headphones (I have tried the diode in either direction, and the headphones are of the right type). The number of loops in the coil connected to the capaciter is 80, for the other two 30 (diameter of two inches).

The only possible problems I can think of is that the "ground" isn't really connected to the ground (although I have also tried a sink) or the individual wires of the antenna are not supposed to touch (which would be impossible to correct, because of the kinkiness of the antenna wire-- though I have connected my antenna to a store-bought radio and noticed a definite improvement in clairity) or that the capaciter is not of the right capacitance. The instructions I'm following call for a 365 picofarad capacitor, but in the schematic, they have a variable one. What I'm getting for a result is not static, but no sound whatsoever-- could this be related to improper grounding, antenna, or capacitance?

Thanks, JimCan

2376. Early Polaroid Palette, model 72-20

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-21 12:24:30 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cuvx4u.6Lo@cix.compulink.co.uk>
Source record: 116665

Early Polaroid Palette, model 72-20
With polaroid back. No data, no cables no software.

Powers up but does nothing...purchase in error
Best offer secures.

Will swap for Tamaron 500mm mirror lens or Leica III(any body) some
INTERESTING old computer gear.
UK Tel 071-431-1204 or Mercury 1-2-1 mobile 0956-544202.

oddjob@cix.compulink.co.uk

2377. Re: Where to buy kits?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-21 15:49:58 UTC
From: sct@po.cwru.edu
Message-ID: <337t36$7t7@usenet.INS.CWRU.Edu>
Source record: 116666

In article <znr777437775k@crl>,
Dennis Rice <drice@crl.com> wrote:
> What are the best sources for kits for amplifiers, receivers,
> transmitters, antennas, etc.

Get a copy of QST, then flip through the pages and request a catalog from anyone who offers kits. There are lots of excellent sources. Many of the best don't have 800 numbers or have unusual hours (being perhaps as much a labor of love as a business) so don't pass those by.

Also read here and on the QRP list for people's opinions about various kits. To pick my last kit, I figured out who the experts are on these lists, then paid attention to what kits those experts liked.

> Also, where is the best place to find plans for building such things
> from scratch? Especially antennas.

The ARRL publishes many books with plans for radios and antennas. See the "ARRL Bookshelf" section in that copy of QST I mentioned. :-) For antennas, they have the Antenna Handbook, several Antenna Compendiums, and more theoretical books like _Reflections_. For radios, see _Solid-State Design for the Radio Amateur_, W1FB's _Notebooks_, and _QRP Classics_.

For good background info on all aspects of ham radio, buy the _ARRL Handbook_. It certainly won't replace the other books, but it will give you a solid foundation.

Your local ham dealer probably stocks many of these, or you can mail-order them from the ARRL or a dealer like Tucker Electronics or the Ham Radio Bookstore.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2378. Re: Where to buy kits? (VERY, VERY LONG!)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 06:58:38 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CuxCpq.Ftw@news.Hawaii.Edu>
Source record: 116568

Here's the `kits' file from the ARRL email server. Sorry about the length but the info it contains will hopefully answer all your questions.

Jeff NH6IL
jeffrey@math.hawaii.edu

****
From info-serv@arrl.org Sun Aug 21 20:03:44 1994
Subject: INFO response: KITS.TXT
Organzation: American Radio Relay League
To: <jeffrey@math.hawaii.edu>

ARRL Technical Information Service
Kit Manufacturers List
Rev.: July 16, 1993 File: KITS

This information package was prepared as a membership service by the American Radio Relay League, Inc., Technical Information Service, 225 Main St., Newington, CT 06111 (203) 666-1541. Email: tis@arrl.org (Internet).

>From the files of the ARRL Automated Electronic Mail Server, (info@arrl.org):

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Lab Notes: Kits Galore!

Summertime, and the living is easy. It's the perfect time to build a kit! You can do it all at once in a mad frenzy, or work on it piecemeal. Either way, you're guaranteed fun, education and true pride of ownership. Mike Gruber, WA1SVF, ARRL Laboratory Engineer, briefly discusses kit-building and provides a valuable list of kit suppliers.--WB8IMY

Q: I'd sure like to try an electronics project, but I'm not quite sure where to begin. I'm considering kits, but is kit building really worth the trouble?

A: Well, when I was a youngster I would watch with fascination as my Dad assembled his latest Heathkit project in our basement. Smoke would often curl up from his soldering iron late into the night. Friends and family would gather for the grand unveiling of his latest triumph. A drawer full of those red plastic nut starters that came with each and every kit (remember those?) is still in our basement somewhere! I received quite an education when I was finally old enough to follow in Dad's kit-building footsteps. This early exposure to electronics inspired me to obtain an Amateur Radio license and even pursue a career in electronics.

Q: Are kits difficult to build? What ever happened to all those classic kit manufacturers, anyway? What about Heath? I've heard that they're out of the kit business. Does this mean that kit building is a thing of the past?

A: Whoa! Easy, big fella. Let me answer your questions one at a time. First, the level of difficulty varies with the individual kit. A very simple kit can require only minimal time, skill and experience to put together. Complex kits can, of course, be considerably more difficult. It is important to determine which kits match your abilities. When selecting a kit, be sure to consider any additional purchases that may be required, such as knobs and cabinets. You may also need test equipment to complete the project.

Second, it's true that many of the old kit manufacturers, such as Eico and Knight-Kit, are no longer in the kit business. Back in the days of point-to-point wiring and vacuum tubes, a kit manufacturer stood a decent chance of succeeding in the consumer electronics market. They offered better products at lower prices--including products not normally available. Today, the miniaturization of electronics, modern assembly techniques, and cheap overseas labor have taken away much of the competitive edge that kit makers enjoyed. Heath, however, is still making kits, mostly of the educational variety. These may be excellent starter kits to get your feet wet.

Finally, it's not true that kit building is a thing of the past. True pride of ownership and the thrill of doing it yourself are things that mass-produced products don't always offer. Many

companies still make kits to fill this niche. Just about any skill level can be accommodated if you know where to look.

Q: Okay, you've sold me. I want to run home right now, warm up my soldering iron! I'll bet you've even compiled a list of kit manufacturers for me. How about it?

A: Yep, here's the list. Happy kit-building!

A & A Engineering
2521 W LaPalma, Unit #K
Anaheim, CA 92801
tel: 714-952-2114
fax: 714-952-3280

A & A offers a wide range of amateur related kits from QRP transceivers to a digital frequency synthesizer and a 450-MHz spectrum analyzer. Electronic components, enclosures, ICs and ham-related publications are also available. Catalog available.

Antique Electronic Supply
6221 S Maple Ave
Tempe, AZ 85283
tel: 602-820-5411
fax: 602-820-4643

Numerous kits for reproducing antique and vacuum tube radios are available. Antique Electronic Supply is also an excellent source for parts, components and documentation for antique radios. Catalog available.

C & A Electronic
PO Box 25070
Athens, 10026 Greece
tel: 52.42.867
tel: 52.42.537

Established in Athens in 1977, C & A Electronic has now grown to 15 employees. Their current 53-page catalog includes over 150 kits with, according to Simeon Krizias, SV1AYI, of C & A, more on the way. The projects range from the relatively simple to the complex. Kits include Amateur Radio, high-fidelity stereo, power supplies and instrumentation projects. Ready-made versions are available for novice kit-builders who prefer advanced or intermediate kits. A special US price list is available.

CCI (Communications Concepts, Inc)
508 Millstone Drive
Beavercreek, OH 45434
tel: 513-426-8600
fax: 513-429-3811

CCI's catalog features many linear amplifiers and projects from Motorola Applications Notes. Amplifier boards and various components are offered separately as sets. Other kit projects include an ATV receive converter and an audio squelch control. Semiconductors and other components can also be purchased separately. VISA and MasterCard accepted.

Cirkit Distribution Ltd.
Park Lane
Broxbourne
Herts EN10 7NQ
tel: 44-992-444111
fax: 44-992-464457

More than 100 kits for the radio amateur, including preamps, power amps, converters, speech processors and a dip meter. Catalog available. Cirkit does not have a price list in US dollars, but does accept Master Card, VISA and American Express.

Curry Communications
852 North Lima St
Burbank, CA 91505
tel: 818-846-0617

Two kits currently available:

The 80-AU converts the entire LF/VLF band to the 80-meter amateur band. Cost is $59.95.

The SAM-1 is a transverter that enables operation on the license-free 1750 meter band with an 80-meter amateur transceiver. Cost is $89.95.

Down East Microwave
RR 1, Box 2310
Troy, ME 04987
tel: 207-948-3741
fax: 207-948-5157

Down East Microwave (DEM) is owned and operated by Bill Olson, W3HQT. Numerous kits are offered for VHF, UHF and microwave projects. Down East Microwave also carries an extensive line of antennas. Office hours are 9 am to 4:30 pm Eastern Time, Monday through Friday. Call anytime; Bill says to be sure to leave a message on the machine if no one is available. Business and personal checks as well as VISA and MasterCard are accepted. COD orders carry a $4 service charge. Catalog available.

FAR Circuits
18N640 Field Court
Dundee, IL 60118

FAR Circuits provides PC boards for a number of QST projects.

Hamtronics, Inc
65 Moul Rd
Hilton, NY 14468-9535
tel: 716-392-9430
fax: 716-392-9420

A wide variety of amateur related kits are available. Kits include VHF and UHF exciters, linear amplifiers, receivers, repeaters, repeater accessories, preamps and receive converters. Some kits are FCC type accepted for commercial service. A 40-page catalog is available.

Heath Company
PO Box 1288
Benton Harbor, MI 49023-1288
tel: 800-253-0570

Although Heath's kit line is no longer as extensive as many old-timers may recall, they still carry a number of "build your own" electronic projects. Their current kit line includes two weather computers and numerous educational kits, such as a portable radio, an electronic cricket and a power supply. VISA, MasterCard and American Express accepted.

John Langner, WB2OSZ
115 Stedman St
Chelmsford, MA 01824-1823

John provides the Pasokon SSTV project kit featured in January 1993 QST. One empty expansion slot in a 286 or faster computer, 640K of memory, a color monitor and a VGA display adapter are all you need to send and receive all popular modes of SSTV. The complete kit is $199.95, or $229.95 for an assembled and tested unit.

Kanga US
Bill Kelsey, N8ET
3521 Spring Lake Dr
Findlay, OH 45840
tel: 419-423-5643 (7 pm to 11 pm Eastern Time only)

Bill, N8ET, operates Kanga US as an importer of QRP kits manufactured by Kanga Products in England:

Kanga Products
Dick Pascoe, G0BPS
Seaview
Crete Road East
Folkstone CT18 7EG
England

Dick is currently the only person at Kanga in England. Kanga offers over 25 Amateur Radio kits with emphasis on QRP. Kanga's philosophy is to keep prices low by not supplying parts typically

found in most junkboxes, such as the cabinet and knobs. Send one unit of First Class postage when requesting a catalog from Kanga US. VISA and MasterCard accepted.

Lake Electronics
7 Middleton Close, Nuthall
Nottingham, NG16 1BX
England
tel: 0602 382509

Every Lake kit is complete, down to the last component, including knobs and screws. The catalog features QRP transceivers, a receiver, an SWR meter, a power meter/dummy load, an antenna tuning unit, an audio filter and a power supply. A special price list is included for overseas customers. VISA, MasterCard and Eurocard accepted.

Mark V Electronics, Inc
8019 E Slauson Ave
Montebello, CA 90640
tel: 213-888-8988 (Catalog and information)
800-423-FIVE orders only (outside California)
800-521-MARK orders only (California residents)
fax: 213-888-6868

More than 70 kits available including high-fidelity audio products, laboratory equipment, power supplies, light controllers, games and numerous miscellaneous projects. Audio amplifiers range from 6 to 300 watts. Kit difficulty levels are individually specified as beginner, intermediate or advanced. VISA, MasterCard and American Express accepted.

M.A.S. Enterprises
UHF Technik
104 King St South
St. Jacobs ON N0B 2N0
Canada
tel: 519-664-1273
fax: 519-664-3082

Four kits currently available: a 6-meter SSB transverter, 2-meter foxhunting receiver, 24 cm FM TV transmitter, and a baseband processor for the TV transmitter. These kits are not intended for beginners. A catalog is forthcoming. Prices range from $69 to $198. Owner: Manfred H. Zielinsky, VE3ZIE.

Microcraft Corporation
P. O. Box 513
Thiensville, WI 53092
Tel: 414-241-8144

Currently available kits: Morse-A-Word CW reader, RTTY Reader, Morse-A-Keyer (CW keyboard keyer), Videoscan 1000 SSTV decoder,

Code*Star reader for CW, RTTY and ASCII. Kit prices range from $140 to $595.

Oak Hills Research
20879 Madison St
Big Rapids, MI 49307
tel: 616-796-0920
800-842-3748
fax: 616-796-6633

Founded by Doug DeMaw, W1FB, and sold three years ago to Dick Witzke, KE8KL. Oak Hills Research has long been a source of QRP kits and components. Several new products are now being added to the company's line. Hours are weekdays from 8 am to 6 pm. VISA and MasterCard accepted.

Ocean State Electronics
PO Box 1458
6 Industrial Dr
Westerly, RI 02891
tel: 401-596-3080
800-866-6626 (orders only)
fax: 401-596-3590

Kits appear on pages 56-61, 64 and 85 of Ocean State's 1993 catalog. Included are a QRP transceiver, several receiver and robot kits, a keyer and code practice oscillator, educational and training kits and electronic test instruments. VISA, MasterCard and COD accepted; $10 minimum order. Open weekdays 8 am to 5 pm EST, Saturday 10 am to noon. Frank Pellicano, WB1GTK, President.

Ramsey Electronics Inc.
793 Canning Parkway
Victor, NY 14564
tel: 716-924-4560
fax: 716-924-4555

A variety of kits ranging from complete amateur transceivers to mini-kit type projects for under $10. Products include VHF/UHF FM transceivers, HF receivers, QRP transmitters, an active antenna, a CW keyer, 20 watt amplifier for a QRP transmitter, shortwave receiver, RDF kits and other projects. Ramsey charges a flat rate of $3.95 for shipping, insurance and handling. Call or write for a free catalog.

$equence Electronics
John Beech, G8SEQ
124 Belgrave Road
Coventry CV2 5BH
England

Monoband direct-conversion receiver and transmitter kits available from 80 through 6 meters. All parts, including a

diecast box and printed circuit board, are included. A three-band version is also available. Other kits include a receive and transmit converter from 10 to 6 meters and an FM transceiver for 50, 70 or 144 MHz. All $equence kits are specified as intermediate-level projects.

Ten-Tec, Inc., T-Kit division
1185 Dolly Parton Parkway
Seiverville, TN 37862-3710
Tel: 1-615-453-7172
Orders: 1-800-833-7373
Fax: 1-615-428-4483

Available kits include 9-Band Shortwave Receiver, 2 Meter Power Amp (for HTs), 6 Meter Transverter, SWR Bridge/Wattmeter, RF Ground Counterpoise, Dummy Load, Air-core Variable Capacitor, and many more items. A 2 Meter FM Transceiver is under development. Write for catalog. Minimum order $15.

Townsend Electronics
PO 415
Pierceton, IN 46562
tel: 800-944-3661 (US Only)
219-594-3661
fax: 219-594-5580

Townsend Electronics carries kits by one of the largest kit manufacturers in England:

C. M. Howes Communications
Eydon, Davantry,
Northants NN11 6PT,
England
tel: 0327 60178

Townsend's 26-page catalog features receivers, transmitters and transceivers. Also included are such projects as a speech processor, a VHF converter, a code-practice oscillator and a digital frequency display. All kits are engineered by Dave Howes, G4KQH, a former BBC engineer, who founded C. M. Howes in 1983. Townsend Electronics accepts VISA and Mastercard. Amateurs outside the United States may order kits from directly from C. M. Howes (Dave requests a couple of IRCs for overseas catalog requests.)

Tucson Amateur Packet Radio (TAPR)
8987-309 East Tanque Verde Rd, No. 337
Tucson, AZ 85749
(817) 383-0000 (voice mail)
(817) 566-2544 (FAX)

TAPR is a nonprofit research and development corporation with more than 1000 members wordwide. It was founded in an attempt to

develop a low-cost Terminal Node Controller (TNC) kit. This effort resulted in the now famous TNC-1. TAPR's second development, the basis for most TNC's currently in use, is known as the TAPR TNC- 2. TAPR no longer provides complete TNC kits. Instead, they have licensed several commercial manufacturers to produce the TNC-2 design. They still provide the TNC-2 circuit board and associated EPROMs, EPROM codes, schematics and manuals. Modems and related hardware are still available in kit form. TAPR also offers an extensive selection of associated software. Catalog is available.

Truscott's Electronic World
Division of Shredall Pty. Ltd
30 Lacey Street
Croydon, Victoria, 3136
Australia
tel: (03) 723 3344
fax: (03) 725 9443

Resells products and kits from Dick Smith, Altronics and Arista. Several other kits also available. Most kits are not for the beginner and were featured projects in Amateur Radio Magazine, the monthly publication of the Wireless Institute of Australia. A catalog is now in the works and new kits are being added.

624 Kits
171 Springlake Dr
Spartanburg, SC 29302
tel: 803-579-6262 (days)
803-583-1304 (after 6 pm)

624 Kits was founded several years ago by Pat Bunn, N4LTA. The name 624 was originally chosen because the company made kits for the 6-, 2- and 420-MHz bands. Even though they no longer make VHF/UHF kits, the name remains. Most of the products offered by 624 are QRP in nature and many appeared in QST. Included are numerous transmitters, receivers, W1FB projects, the Modified Cubic Incher, the Neophyte Receiver and the Gary Breed, K9AY, receiver kit. Any kit can be returned for a full refund before assembly. All parts are 100% guaranteed and repair service is also available. Please include two units of First Class postage when requesting a catalog.

Other sources of kits:

All Electronic Components
118-122 Lonsdale Street
Melbourne, VIC 3000
Australia
NOTE: SWL, Amateur, Test Equipment

Altronics
P.O. Box 8350
Perth Mail Exchange
WA 6000
Australia
NOTE: Test Equipment, Power Supplies

Auskits
Amblecote Crescent
Mulgrave, VIC 3170
Australia
NOTE: Amateur, QRP

Dan's Small Parts and Kits
1935 South 3RD West #1
Missoula, MT 59801
Tel: 1-406-543-2872
Note: Neophyte Rx, 40M Cub in., 20M Superhet, others.

Dick Smith Electronics
P.O. Box 468
Greenwood, IN 46142
1-317-888-7265
Note: General kits

Digitrex Electronics
1005 Bloomer Road
Rochester, MI 48063
NOTE: VHF, QRP, Amateur

Eico Electronic Instruments Co., Inc.
363 Merrick Rd
Lynbrook NY 11563
Note: No current kits, EICO manuals and schematics only

Harlech Electronics
Noddfa, Lower Road
Harlech, Gwynedd LL46 2UB
England
NOTE: QRP, SWL

Hosfelt Electronics Inc.
2700 Sunset Boulevard
Steubenville, OH 43952
1-800-524-6464
Note: General interest kits

IDIOM Press
P.O. Box 583
Deerfield, IL 60015
Note: CMOS Super-keyer II

John Beech
124 Belgrave Road

Wyken, Coventry CV2 5BH
England
NOTE: Amateur Transceiver

Maplin Electronic Supplies
PO Box 3
Rayleigh, Essex SS6 8LR
England

Mercury Systems
15 Lakeside Dr.
Marlton, NJ 08053
1-609-596-3304

MFJ
Box 494
Mississippi State MS 39762
601-323-5869
Note: SW receiver kit, QRP kits

NCG
1275 North Grove Street
Anaheim, CA 92806
NOTE: 15 m Mobile XCVR

Q-Sat
P.O. Box 110
Boalsburg, PA 16827
NOTE: SWL Receiver

R & R Associates
3106 Glendon Avenue
Los Angeles, CA 90034
NOTE: Amateur, QRP

S & S Engineering
14102 Brown Road
Smithsburg, MD 21783
Tel: 1-301-416-0661
Note: ARK-40 QRP CW kit

Smith Enterprises
408 East Mauna Loa
Glendora, CA 91740
NOTE: QRP

Steward Electronics Components Pty
P.O. Box 281
Oakleigh, VIC 3166
Australia
NOTE: Amateur

Tejas RF Technology
P.O. Box 720331
Houston, TX 77272-0331
NOTE: Backpacker II, other Amateur kits

NOTE: The ARRL does not warrant any of the manufacturers listed above, or their products. Addresses subject to change without notice.

2379. Re: WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 12:57:37 UTC
From: mds@meaddata.com
Message-ID: <33a7c1$ndn@meaddata.meaddata.com>
Source record: 116569

In article <777331508snz@lfheller.demon.co.uk>, Leon@lfheller.demon.co.uk (Leon Heller) writes:
|> In article <32u8co$ima@canopus.cc.umanitoba.ca>
|> rflukes@silver.cs.umanitoba.ca "Richard F. Lukes" writes:
|>
|> > I am trying to find a source for the Signetics NE604 or the equivalent

--

Try DC Electronics in Scottsdale, Arizona. Mailing address is
PO Box 3203, Scottsdale, AZ 85271. Phone number: 800-467-7736

They do have a $15 minimum order, but I think that is waived on pre-paid orders. I don't have their catalog in front of me so I don't know for sure if they have that chip. I do remember seeing some Signetics chips.

Mike Suhar WB8GXB
mds@meaddata.com

2380. Subject: Reed Relays for RF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 13:18:10 UTC
From: Waltk@pica.army.mil
Message-ID: <9408220918.aa16004@COR5.PICA.ARMY.MIL>
Source record: 116570

>Subject: Reed Relays for RF

>I am (for some time now) in the process of building a 4-1000 linear amplifier.
>It will run a good KW (4KV plate voltage). I have a good vacuum relay for
>the output RF switching. I am planning on using a RF rated reed relay to
>switch the input RF.

Get a copy of the January issue of QST. There is an article in there
by linear expert, R. Measures, AG6K. He describes a QSK circuit using
a Kenwood RF reed relay for the input switching and a Jennings RJ1A for
the amp. I built a QSK circuit based on his description and am very
pleased with the results. The exciter relay is a replacement part
for Kenwood TS850S. It cost about $30 w/shpg, from Kenwood's East
Coast parts distributor.

I used a quad-trace scope to measure the timing of input and output
relays and was amazed how fast and clean the timing mechanism was.
I used Measure's values for all time critical functions.
.....
73 de Walt Kornienko - K2WK Internet: waltk@pica.army.mil
DX PacketCluster: K2WK > W3MM (FRC) Packet: K2WK@N2ERH.NJ.USA.NOAM

2381. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 13:48:36 UTC
From: jeroen@dxcern.cern.ch
Message-ID: <1994Aug22.134836.8674@dxcern.cern.ch>
Source record: 116589
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <fred-mckenzie-1708941430140001@128.159.123.111>,
Fred McKenzie <fred-mckenzie@ksc.nasa.gov> wrote:
>The "super-regenerative" receiver (detector) should also be considered in
>the discussion. I never understood how they worked,...

These things have always puzzled me too.
As my current understanding goes, an oscillator tuned to the
approximate frequency of reception is periodically stopped and then
allowed to restart at a rate of, say, 40KHz. If some received
energy at the right frequency is coupled into the resonant
circuit, the restart tends to be quicker, with a noticable effect
on the current drawn by the oscillator.

The current drawn by the oscillator contains the output signal.

Is this how it works?

Best regards,
Jeroen Belleman

2382. Re: DME (Dog Measuring Equipment)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 16:22:53 UTC
From: nickb@Sun.COM
Message-ID: <33ajct$s26@engnews2.Eng.Sun.COM>
Source record: 116572

PaulBreed (paulbreed@aol.com) wrote:
: The Problem:
: The dog keeps taking off.
: It would cost too much to fence our 2 ac. in the woods,
: and he usually takes off when the kids get bored throwing the ball for him
: etc..
: (So he's not on his chain when the kids are throwing the ball etc...)
: Any system that worked could also be used to detect kid snaching etc...

: The solution:
: Devise a system that would tell me when He was leaving the yard.
: The dog carried part would have to fit on the collar of an 85lb
: dog.
: It would be nice if the battery lasted at least a week.

: Idea #1
: Build a simple Distance measuring system (Pulse and respond)
: Alarm when the dog was 300ft +- 50ft from the house.
: +-50 Ft is +/- 50 nsec

<stuff deleted...>

: 4)How does the commercial perimeter system work?
: What frequency does it operate on?

Paul,

Why bother jumping up and running after the dog every time he escapes?
The commercial systems use an electrical shock collar to teach the dog
not to go beyond the perimeter. On most dogs it works great. On really
big dogs, I've heard that it doesn't faze them at all. Anyway, I think
they work on a field strength basis. An antenna wire is run around the
property perimeter, and when the collar comes within about a meter, zing!
Sounds cruel, but the dog doesn't mind so much (well if he could talk,
I guess he'd say he does :->). I'd imagine that it uses a pretty low
frequency, like 100 KHz, but I really don't know. My impression is that
they are expensive, like a couple hundred for a system. Any pet store
has info on the systems (try Petco, Premium Pet, etc.).

BTW, I guess we should move this to rec.pets.dogs.

Nick Barbieri Amateur Radio: KB6QI

2383. Re: help with crystal set?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 16:34:07 UTC
From: zlau@arrl.org
Message-ID: <1994Aug22.163407.22738@arrl.org>
Source record: 116571

JimCan (jimcan@aol.com) wrote:

: The only possible problems I can think of is that the "ground" isn't
: really connected to the ground (although I have also tried a sink) or the
: individual wires of the antenna are not supposed to touch (which would be
: impossible to correct, because of the kinkiness of the antenna wire--

The antenna/ground is important for improving reception, but unless you
live far from any AM station, I wouldn't worry about it, just yet.

: though I have connected my antenna to a store-bought radio and noticed a
: definite improvement in clairity) or that the capaciter is not of the
: right capacitance. The instructions I'm following call for a 365 picofarad
: capacitor, but in the schematic, they have a variable one. What I'm
: getting for a result is not static, but no sound whatsoever-- could this
: be related to improper grounding, antenna, or capacitance?

You need a variable capacitor to properly tune the radio. After all,
if you tune a normal radio to the wrong frequency you just get static.
The headphones you are using may not be sensitive enough to pick up static.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2384. Band trap filter designs wanted!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 18:19:38 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Aug22.181938.22986@ttinews.tti.com>
Source record: 116574

Im looking for a "band trap" filter design, it should begin attenuating at or near 26 MHz, have very steep skirts, be of a 9 or 11 pole design, so that the filtering is at least 90dB, and the upper cutoff should be at or near 28 MHz. If this sounds like an 11m trap, it is! Such that all frequencies BELOW 26 MHz pass, and all ABOVE 28 MHz pass. To me it seems like a low pass filter (26) and a high pass (28) in parallel, but Im unsure of how to match the two sections so as to provide a trap band filter with 50 ohm impedance and a .5dB insertion loss. Anybody?

(the qrm in my neighborhood is fierce!)

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +----------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Government produces NOTHING!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +----------------------------+
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

2385. building questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 18:56:18 UTC
From: jfilner@reed.edu
Message-ID: <33asci$k2g@scratchy.reed.edu>
Source record: 116575

I have two questions which I thought I'd roll into one post:

1) I seem to remember someone saying on this group that FM tranceivers were relatively easy to make with the right chip set. Does anyone have a very simple design, that could be assembled cheaply?

2) I have come into an accesory VFO which has memories as well as other bells and whistles on it, and was thinking it might be nice to build an HF transciever around it. So I'd like a simple design that puts out at least a couple of watts, that would be capable of CW and SSB.

I've got pretty good soldering skills, and used to be both a compter repair tech, and various types of telco tech. I'm perfectly comfortable with building, but my theory is weak so, I'd like a design that is simple to align and repair. I know somebody is thinking that I should buy a kit. I'm thinking about doing that too, but building my own might be more fun.

End of line...
jfilner@reed.edu

Waiting for my call : (

2386. Re: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 19:05:16 UTC
From: hunter@s07.es.llnl.gov
Message-ID: <33astc$415@lll-winken.llnl.gov>
Source record: 116573
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc

I would be very hesitant to put any electronic equipment in a dishwasher. Don't forget that it is assembled with lead solder. I imagine that you will end up with measurable amounts of lead on your next load of dishes.

Steven Hunter KC6RKV

2387. 440Mhz 50 ohm - 70 ohm transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 21:20:07 UTC
From: JAY@medicine.dmed.iupui.edu
Message-ID: <JAY.49.2E591687@medicine.dmed.iupui.edu>
Source record: 116579

I have been looking for information on building a 50 ohm - 70 ohm transformer for 440Mhz.

I have been told that to pick up ATV at 439Mhz, you can use a cable ready TV if you match the antenna to your TV. I have the TV, and I have the antenna, but I need to match the two.

If anyone has any ideas, let me know.

Thanks
Jay

KA9OKT
jay@medicine.dmed.iupui.edu

2388. Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 21:39:04 UTC
From: btoback@netcom.com
Message-ID: <btobackCuyHH5.Hw4@netcom.com>
Source record: 116578
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.homebrew

I hope that one of these will be the correct newsgroup for this question; advice on redirection is welcome.

I'm thinking of assembling a portable EME station that I could use for demonstrations at schools. I don't know if such a thing is possible at any reasonable cost, or for any reasonable definition of "portable." But here are the questions anyway:

1. I assume that because of my Arizona location, I can't use 432MHz. This seemed to be the best compromise between power amplifier practicality and antenna size. Is 23cm a good second choice?

2. Assuming that 23cm is a good second choice, how can I generate the necessary power on that band? I've found one amplifier design, in the 1975 (!) ARRL Handbook. It uses a pair of 3CX100A5 tubes and could be used for 200W continuous or 400W intermittent. Since the antenna will be compromised for portability's sake (no 24-ft dishes), I'd like to get more power than this. Has the state of the art improved since 1975? If so, where can I find construction information?

3. Various publications have stated that Yagi designs have proven unsatisfactory for EME work at 23cm, but don't say why. I can make guesses (losses in the splitter network, etc.), but don't know for sure. Is it in fact possible to use these for 23cm EME work? A back-of-the-envelope calculation suggests that a 24dBi array could be quite practical, but I haven't considered splitter network losses.

4. If a Yagi array really can't be made practical, does anyone know of some portable dish designs -- 4m or so? The dish doesn't have to be rugged or able to stand up to weather since it will never see a permanent installation.

The objective is a station that can hear its own echoes -- not necessarily with communication-capable quality -- and can communicate with a "big gun" EME station. If my planning is going in a completely fruitless direction for such an objective, I'd like to know early on!

Thanks,
-- Bruce Toback
KN6MN

2389. Re: 4-1000 Homebrew Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 22:54:44 UTC
From: Tom Skelton <Tom.Skelton@ClemsonSC.NCR.COM>
Message-ID: <CuyKz8.E66@ncrcae.ColumbiaSC.NCR.COM>
Source record: 116580

>In article <32vss2$78i@search01.news.aol.com> ELLS22 writes:
>Thanks for the response to my inquiry about passive grid circ uits for
>4-1000 Amp. I even found some parts I needed. The project is moving
>forward slowly with much work on the Power Supply...using a LARGE
>Powerstat in the primary for max control of voltage and another Powerstat
>in the screen voltage supply .
>
>I will let all know how it works and will look for any further comments on
>the DXo-all and be-all project.
>
>73 Russ WA6CWV..Boise, Idaho
>>
I meant to reply earlier. I am gathering parts for a 4-1000 myself, and only need the power transformer and vacuum variables for the plate tuning and loading. I have a good bit of experience, however, with helping a friend with his 4-1000's. If you lay it out cleanly, have a good input circuit (it takes more than
100 watts to get the 4-1000 to really start moving), and a hefty power supply you will
be the proud owner of a fine signal!!! (btw: I had all the parts years ago to build
one but sold them....out of stupidity or poverty, can't remember which!)

73, Tom WB4iUX
My posting is my view only and not AT&T's. But you know that!
DX IS !!!!!
And always will be.....

2390. Re: Ham-Homebrew Digest V94 #245

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 23:23:19 UTC
From: Dale_Croft@comsys.rockwell.COM
Message-ID: <9407227776.AA777601399@SmtpSend.comsys.rockwell.com>
Source record: 116576

ref article
Date: 18 Aug 1994 15:19:06 -0700 From:
agate!howland.reston.ans.net!europa.eng.gtefsd.com!newsxfer.itd.umich.edu!
z
ip.eecs.umich.edu!yeshua.marcam.com!news.kei.com!ssd.intel.com!chnews!ornews.int
e l.com!ornews.@@ihnp4.ucsd.edu Subject: 50 watt amp for six
meter(schems). To: ham-homebrew@ucsd.edu

> In article <phb.777238394@melpar> phb@syseng1.melpar.esys.com (Paul
> H. Bock) wri t es: >fdugas@halcyon.com (Fred Dugas) writes: > >>I
> am looking for schematics for a medium power amp for six
> meters...

> If you wish, I'll dig back through my old ARRL Handbooks and VHF
>Manuals and see what's there; copies are free if I find anything of
>potential interest.

>Also check old copies of Ham Radio magazine. I have an old 826 tube
> that came out of an ultrasonic cleaner that will put out 90 watts
> up to 150Mhz. Specs for it are in the old Handbooks. The trick
> is to find a design that's close to what you want and then modify
> it to match what's available.

>My Dad ran a Clegg Venus which has about as clean a 40-watt signal as ever
>I've seen on 6 (I ran spectral measurements on it) and he still had
>TVI problems;...

>Wow, I'll bet that's a rare radio! I have a Clegg 99'er and used to
> have a Clegg 66'er but they both are runts compared to 40 watts.
> How many different 6 meter models did Clegg make?

>zardoz@ornews.intel.com WA7LDV Leave it to the BEAVER
> state
>I speak only for myself. <<< OREGON >>>

I owened the Clegg Thor-6 (35 watts AM) and the Zewus (150 watt
am) 6-2 tx used with the Intercepter RX. Ed Elegg sold his ham
gear company to one of the big corporations who promptly swalled
their patents and shut down the ham production!

A suggestion for the 6 meter amp would be to look for old low-band
fm tx strips which were made by motorola, ge, rca, etc. The tubes
would typicaly be 6146, 829, 5894 etc and outputs ranged from
30-200 watts. That would acquire a functional socket, maybe a good
tube and tank circuits which could be modified easily to cover the
six meter band or the 10 meter band. If you acquire old low band
fm base stations that would also get you a class c power supply.

Bias supplies for SSB useage would not be as big a problem as the main plate and filement supplies. You can also try the same approach with solid state rigs but I have had no experience in such conversions. If you are interested in mobile use of the amp you might look for somehting like a motorola g strtip transceiver and abondon the rx and exciter portions.

good luck..

Dale_Croft@comsys.rockwell.com | My employer does not endorse my
k5vmu @ Plano,Tx | opinions nor thoughts!! Perhaps
dale.croft@lunatic.com | I should disclaim them!!!!!

2391. Re: Ham-Homebrew Digest V94 #245

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-22 23:23:24 UTC
From: Dale_Croft@comsys.rockwell.COM
Message-ID: <9407227776.AA777601404@SmtpSend1.comsys.rockwell.com>
Source record: 116577

ref article
Date: 18 Aug 1994 15:19:06 -0700 From:
agate!howland.reston.ans.net!europa.eng.gtefsd.com!newsxfer.itd.umich.edu!
z
ip.eecs.umich.edu!yeshua.marcam.com!news.kei.com!ssd.intel.com!chnews!ornews.int
e l.com!ornews.@@ihnp4.ucsd.edu Subject: 50 watt amp for six
meter(schems). To: ham-homebrew@ucsd.edu

> In article <phb.777238394@melpar> phb@syseng1.melpar.esys.com (Paul
> H. Bock) wri t es: >fdugas@halcyon.com (Fred Dugas) writes: > >>I
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> meters...

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>zardoz@ornews.intel.com WA7LDV Leave it to the BEAVER
> state
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fm tx strips which were made by motorola, ge, rca, etc. The tubes
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Bias supplies for SSB useage would not be as big a problem as the main plate and filement supplies. You can also try the same approach with solid state rigs but I have had no experience in such conversions. If you are interested in mobile use of the amp you might look for somehting like a motorola g strtip transceiver and abondon the rx and exciter portions.

good luck..

Dale_Croft@comsys.rockwell.com | My employer does not endorse my
k5vmu @ Plano,Tx | opinions nor thoughts!! Perhaps
dale.croft@lunatic.com | I should disclaim them!!!!!

2392. Re: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-23 04:04:47 UTC
From: nuke@netcom.com
Message-ID: <nukeCuyzBz.ML3@netcom.com>
Source record: 116581
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc

In article <33astc$415@lll-winken.llnl.gov>,
Steve Hunter 510-423-2219 <hunter@s07.es.llnl.gov> wrote:
>I would be very hesitant to put any electronic equipment in a dishwasher. Don't forget that
>it is assembled with lead solder. I imagine that you will end up with measurable amounts of
>lead on your next load of dishes.

I bet you a dozen doughnuts you end up with measureable amounts of
lead on every load of dishes you do. Lead is detectable down into the
ppt range.

The neutral-to-slightly-alkaline water produced by most dish
detergents shouldn't leach much lead at all from solder, not even the
cruddy 40/60 SnPb stuff. That which does come out will be thoroughly
washed away.

In short, don't lose any sleep. If you are paranoid, one empty-unit
cycle should wash it all away.

Bill ke6jnr

--
Bill Newcomb "Most of what I've learned over the years has
nuke@netcom.com come from signatures." -Larry Wall

2393. Re: Homebrew Global Positioning System (GPS)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-23 05:25:00 UTC
From: rmk@hit.sb.sub.de
Message-ID: <5VOK33dbAkB@hit42.hit.sb.sub.de>
Source record: 116500
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.misc,rec.radio.amateur.homebrew

Hello from Germany!
The Rockwell Comany offers for about 800 DM - 1500 DM GPS-Modules for
customized applications. The modules have a RS232 interface.

Rainer M. Kreten

--

CrossPoint v3.0 R

2394. Re: Band trap filter designs wanted!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-23 16:56:59 UTC
From: tomb@lsid.hp.com
Message-ID: <Cuzz30.E9@hpcvsnz.cv.hp.com>
Source record: 116582

Erik Sorgatz (sorgatz@avatar.tti.com) wrote:
: Im looking for a "band trap" filter design, it should begin
: attenuating at or near 26 MHz, have very steep skirts, be of
: a 9 or 11 pole design, so that the filtering is at least 90dB,
: and the upper cutoff should be at or near 28 MHz. If this sounds
: like an 11m trap, it is! Such that all frequencies BELOW 26 MHz
: pass, and all ABOVE 28 MHz pass. To me it seems like a low pass
: filter (26) and a high pass (28) in parallel, but Im unsure of
: how to match the two sections so as to provide a trap band filter
: with 50 ohm impedance and a .5dB insertion loss. Anybody?

: (the qrm in my neighborhood is fierce!)

You really need _that_ much attenuation?? 60dB would reduce 1 watt down to 1 microwatt, and 1 watt is a whale of a lot of power to be receiving...

The conventional way to design a band-reject filter is to start with a lowpass filter and transform it. Basically, you would build a 1MHz lowpass, and resonate all the (series) inductors with parallel capacitors and all the (shunt) capacitors with series inductors; each would resonate at 27MHz. If you are starting with an elliptical response, you don't just have series inductors and shunt capacitors...

If you want 0.5dB insertion loss, you will have to have inductors with rather high Q: if you are dealing with a 9 pole design, the loaded Q of the high-Q resonators will be above 100, and 0.5dB loss indicates you need an unloaded Q around 20 times that, off the top of my head. (Please don't turn the flames too high; this was a very quick mental calculation.)

73, K7ITM

2395. Re: DME (Dog Measuring Equipment)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-23 21:29:10 UTC
From: jlivingston@cix.compulink.co.uk
Message-ID: <Cv0Bon.Cvr@cix.compulink.co.uk>
Source record: 116583

There is a system known as "Biotrack" available in the UK for animal tracking - also used for finding free flight competeition model aircraft. It works on 173 MHz and is legal here - seems to work out to about 1 mile on the ground. There are various transmitters available - the smallest is only a few grams and truly tiny. No problem to fit on a collar. Battery life is about a week for the smallest. The snag is the cost of the matching DF receiver - a very small hand held with a 3 el yagi - about 350 ukp ($500 or thereabouts, I guess). You could always make your own, of course. The transmitters are about 48ukp ($60-70).
I believe the supplier is :

Biotrack
Stourborough Croft
Wareham
Dorset
BH20 5AJ
UK

Phone +44 929 552992

John L

2396. FFTMORSE (was: DSP on a SoundBlaster)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-23 22:05:14 UTC
From: david@djwhome.demon.co.uk
Message-ID: <777704714snx@djwhome.demon.co.uk>
Source record: 116584

In article <BRUSCH.1.00126AD8@NCSBST01CA.NTC.NOKIA.COM> BRUSCH@NCSBST01CA.NTC.NOKIA.COM (Simon Brusch) writes:
>
>On a local software archive I found a program which uses a SoundBlaster (type

It's also on SimTel.

>unknown) to perform an FFT, then look for a tone and decode it as morse. The

It doesn't work on SBPro's in its basic form (the problem is that it spuriously enables the speaker, although some report that it doesn't always work even if this is fixed.)

>program is stored as fftmorse.zip; the copyright notice is 1992 and the
>program was written by:
>
>Franois Jalbert (jalbert@IRO.UMontreal.CA)

There are at least a couple of more recent derivatives of this, although one depends on a particular version of Creative's drivers. I have an incomplete one written in Gnu C for the DJGPP port.

The published versions are dspmorse, by Rocco Caputo, and sbpmorse by Darrek Kay (kayd@xanth.cs.orst.edu).

>The C source code for the program is included and the .doc file includes a
>good desciption of the code and the FFT implementation (DFT actually). If you
>can't find the file on your local PD archive I can probably mail it (it's only
>27k).

Unfortunately this is nothing like what was being asked for, which is analogue input and output with digital filtering, which you can't do on any of the 8 bit SBs in real time.
--
David Woolley, London, England david@djwhome.demon.co.uk
Demon supplies me with IP/SMTP/NNTP. *.demon hosts are independently managed.

2397. PC Board design Software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 00:45:42 UTC
From: beau@enterprise.america.com
Message-ID: <33e57m$jb@enterprise.america.com>
Source record: 116596

[No readable article body recovered]

2398. Motorola HT's WANTED!!!!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 02:19:00 UTC
From: darryl.linkow@ledge.com
Message-ID: <898744B.01B5000821.uuout@ledge.com>
Source record: 116588

8/23/94
Hello all! I am in IMMEDIATE NEED of some Motorola
walkie-talkies. I am looking for either Motorola HT-600,
MT-1000, or Motorola Radius P200 units. They must be 5 Watt
units and have at least 6 channels and must cover the 157-174 Mhz.
range. I am also interested in accesories for these units, such as
speaker/microphones, headsets, etc. Let me know what you have.
WILL PAY CASH or can trade for hardware and/or software items
from my ads. Leave message here or give me a call.
Darryl Linkow
(818) 346-5278 9 am - 5 pm PDT
(The VERY BEST time to reach me is ANY MORNING right at 9 am PDT)

---
* OLX 2.2 * Darryl Linkow (818)346-5278 9 am - 5 pm PDT

2399. Re: VFO drift questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 06:24:08 UTC
From: claude@bauv.unibw-muenchen.de
Message-ID: <claude.777709448@bauv106>
Source record: 116585

Michael@arkas.demon.co.uk (Michael J Dower) writes:

>In article <330a7b$iq3@mrnews.mro.dec.com>
> randolph@est.enet.dec.com "Tom Randolph" writes:

>>
>> I'm building a 40m copy of W1FB's "universal VFO" as seen in QRP Notebook.
>> I have the actual oscillator itself running, no buffer stages yet. About
>> how much drift can I expect out of one of these before I get it closed up
>> in some kind of box? I found that I can blow on it and get it to drift by
>> a couple of hundred Hz, presumably due to cooling/heating...
>>
>> Description for those without the book: Hartley osc., #6 material toroid
>> and NP0 caps, MPF102 JFET with 9V supply regulated by a Zener. I cheated a
>> bit and used a cheapo trimmer cap in the osc. (Mouser's "6mm snap-in mount",
>> listed as N750). Should I fork over the $3 for the air trimmer?

>Hi Tom

>The variation of the VFO's toroidal core with temperature will cause drift -
>generally large enough to be annoying! :)

>When building oscillators I follow some of the guidelines in "Solid State
>Design for The Radio Amateur": don't use iron powder / ferrite cores -wind air-
>core inductors if possible; mechanically secure all components, as vibration
>will cause drift and FM'ing; and numerous others.

>I've used Series-tuned Clapp and Colpitts oscillators as free-running VFO's
>with relatively low drift (i.e. without a PLL circuit to stabilise them) -
>these can be built to minimise the use of iron powder / ferrite.

Do not forget that capacitors have drift too. Fortunatly you can use
appropriate capacitors to compensate L's drift. Mechanical stability is
mandatory. Use stable capacitors, some ceramic type C's are a good choice.
--
Claude F. (claude@bauv106.bauv.unibw-muenchen.de)

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

2400. AM Antenna question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 06:26:57 UTC
From: seanh@nucleus.com
Message-ID: <Cv10Ky.312@nucleus.com>
Source record: 116586

Hello, I thought this would be the best newgroup to post this question since the questions is mostly radio-oriented with less emphasis on electronics...

I'm currently working on a (tube-driven) AM radio. I've gotten this thing to work quite well using a a long (50') antenna, it sounds great! The unit employs the use of a homemade tuning coil which consists of 2 inches of 26 ga. wire wound around a 2 inch OD plastic pipe. This coil is also tapped a third of the way down. The two ends of the coil are connected to the antenna and to ground, respectively. The tap leads to the detector and accompanying circuitry.

Now thats you have a bit of background... here's my question: I'd like to build this unit so that it can operate without having to use 50' of wire as an antenna. I'd like eventually have the unit so it does not require an external antenna like commerical AM receivers. I guess my question is, how do commericial AM receivers accomplish this without the use of an external antenna? I know that somehow this is done by using a (seperate?) coil wound on the main tuning coil as an antenna, but the speciics of this are unknown to me. I really dont know if commerical receivers employ RF amps or active antennas or whatever because the designs are so varied. My radio is not superhet or regenerative or anything -- just TRF.

So how could I 'inductively' extend my antenna?

Thanks in advance!

- SVH

2401. Re: VFO drift questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 08:02:31 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cv1507.Lzl@news.Hawaii.Edu>
Source record: 116587

In article <330a7b$iq3@mrnews.mro.dec.com>
randolph@est.enet.dec.com "Tom Randolph" writes:

> I'm building a 40m copy of W1FB's "universal VFO" as seen in QRP Notebook.
> I have the actual oscillator itself running, no buffer stages yet. About
> how much drift can I expect out of one of these before I get it closed up
> in some kind of box? I found that I can blow on it and get it to drift by
> a couple of hundred Hz, presumably due to cooling/heating...
>
> Description for those without the book: Hartley osc., #6 material toroid
> and NP0 caps, MPF102 JFET with 9V supply regulated by a Zener. I cheated a
> bit and used a cheapo trimmer cap in the osc. (Mouser's "6mm snap-in mount",
> listed as N750). Should I fork over the $3 for the air trimmer?

Amazing coincidence, Tom. I'm in the process of building this same VFO
(out of the first edition of QRP NOTEBOOK). I'm using the variable cap
from a TV UHF tuner. I've wound all the inductors/chokes on cardboard
forms, air core, except for the 500 uH choke - I'll lose count of the
turns if I have to wind an inductor that large.

Almost all the parts for it were found in an old TV; I'll have to
break down and *buy* the MPF102's at RS, though.

Did you actually use the 1N914 diode? I've got dozens of diodes so
I'll pick one at random.

Keep us posted as to the status of the VFO, and its drift...

73,
Jeff NH6IL

2402. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 13:46:41 UTC
From: zlau@arrl.org
Message-ID: <1994Aug24.134641.2121@arrl.org>
Source record: 116590

Bruce Toback KN6MN (btoback@netcom.com) wrote:

: 1. I assume that because of my Arizona location, I can't use
: 432MHz. This seemed to be the best compromise between power
: amplifier practicality and antenna size. Is 23cm a good
: second choice?

It probably is since you want to hear your own echos. 2 meters
might be better if you just wanted to contact a few really
big stations. Of course, due to the scheduled nature of this
operation, it may be entirely feasible to coordinate your activities
with the primary users of the spectrum. 70 cm is a much better
choice, due to equipment availability and the number of stations
available to contact.

:
: 2. Assuming that 23cm is a good second choice, how can I generate
: the necessary power on that band? I've found one amplifier
: design, in the 1975 (!) ARRL Handbook. It uses a pair of
: 3CX100A5 tubes and could be used for 200W continuous or
: 400W intermittent. Since the antenna will be compromised for
: portability's sake (no 24-ft dishes), I'd like to get more
: power than this. Has the state of the art improved since 1975?
: If so, where can I find construction information?

You can combine these amplifiers with hybrid combiners. There
reportedly are higher power tubes available, but I would call
designs using these experimental. Not what you would want for
a demonstration. Be sure to shield the cavity. An extra layer
of shielding might even be appropriate for this application.

: 3. Various publications have stated that Yagi designs have proven
: unsatisfactory for EME work at 23cm, but don't say why. I can
: make guesses (losses in the splitter network, etc.), but don't
: know for sure. Is it in fact possible to use these for 23cm
: EME work? A back-of-the-envelope calculation suggests that a
: 24dBi array could be quite practical, but I haven't considered
: splitter network losses.

If you really had to, you might be able to make it work by installing
a preamplifier at the feed of each yagi. Since most amateurs have
difficulty coming up with *one* really good EME preamp, this technique
isn't practical. Even if you do this, most yagi arrays aren't anywhere
near as clean as a dish in terms as pattern. Actually, for receive, you
are really interested in something known as the gain to temperature ratio.
The temperature is the background noise when the dish is pointed at cold

sky. If you can cut it in half, say by going to a cleaner array, you can hear 3 dB better.

: 4. If a Yagi array really can't be made practical, does anyone
: know of some portable dish designs -- 4m or so? The dish
: doesn't have to be rugged or able to stand up to weather since
: it will never see a permanent installation.

Look at the K2RIW stressed parabolic dish design in Chapter 19 of the ARRL antenna book.

:
: The objective is a station that can hear its own echoes -- not
: necessarily with communication-capable quality -- and can
: communicate with a "big gun" EME station. If my planning is going
: in a completely fruitless direction for such an objective, I'd
: like to know early on!

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2403. Re: 440Mhz 50 ohm - 70 ohm transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 14:01:08 UTC
From: zlau@arrl.org
Message-ID: <1994Aug24.140108.2318@arrl.org>
Source record: 116591

Jay Sissom KA9OKT (JAY@medicine.dmed.iupui.edu) wrote:
: I have been looking for information on building a 50 ohm - 70 ohm transformer
: for 440Mhz.

: I have been told that to pick up ATV at 439Mhz, you can use a cable ready TV
: if you match the antenna to your TV. I have the TV, and I have the antenna,
: but I need to match the two.

I wouldn't bother. Hook up the two and see if you see anything. If you
need a better picture, get a mast mounted preamplifier. With typical
coax runs, the line loss will improve the match seen by the preamplifier,
if the preamp even cared. Interesting, MMICs are sometimes advertised
as 50/70 ohm devices--you are suppose to use them as is whether or not you
have a 50 or 70 ohm system!

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2404. 2 M to FM Broadcast Reply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 14:37:09 UTC
From: mack@mails.imed.COM
Message-ID: <9407247777.AA777747053@mails.imed.com>
Source record: 116593

Jeff:

This sounds like a good idea on the surface, but it has some very serious technical problems. FM broadcast is wideband FM (VERY wideband) whereas amateur is narrow band. The bandwidth of an amateur signal is about 15KHz (give or take a little) with channels either every 15KHz or 20KHz depending on where in the US you are. If things have changed in the last 5 years they may all be 20KHz now. Broadcast bandwidth is 200KHz. So you see if you use the broadcast radio you will actually be listening to 10 amateur frequencies at once.

If you could put a very narrowband filter (not practical at this frequency) between the converter and the radio, it WOULD be possible to receive an amateur signal. The problem would be VERY low audio output with a lot of background noise. It probably would work though!

Sorry to be the bearer of bad news.

Ray
WD5IFS
mack@mails.imed.com

2405. 440 MHz 50 ohm to 75 Ohm transformer Reply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 15:08:57 UTC
From: mack@mails.imed.COM
Message-ID: <9407247777.AA777748853@mails.imed.com>
Source record: 116592

There are 5 ways to tackle this problem.

1) If this is receive only don't worry about it. The input Z of the TV is probably not all that close to 75 Ohms anyway.

Please note that the TV standard is 75 NOT 70 ohms!

2) If you REALLY want a good match, you can use a 1/4 wave transformer (see page 16-4 of 1988 or similar vintage ARRL Handbook). This requires 61 Ohm coax which is not readily available. However, 1/4 wavelength at 440 is 6.7 inches for air core coax. You can make a fairly good transformer from coax you make yourself from 1/8 od tubing for the center conductor and 3/8 od tubing for the outer conductor. Buy this tubing at most hardware stores or any model airplane hobby store. just find a way to keep the pieces concentric and solder on the proper connectors. This should be good for about 100 watts of power.

3) If you want a good match and you don't care about attenuation, just put a 24 ohm carbon composition resistor in series with the input. This is what we do when measuring 75 ohm systems on 50 ohm test equipment.

4) Use a PI filter to transform the impedances. See the section of the handbook on matching transmitters in the handbook.

5) Change your transmitter and antennas to be 75 ohm systems as suggested by someone else. There IS NOTHING sacred about 50 ohms. It just sorta worked out that that is what everyone but TV people use.

I personally like methods 1 and 2 above.

Ray
WD5IFS
mack@mails.imed.com

2406. Crystal set Problems Reply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 15:34:44 UTC
From: mack@mails.imed.COM
Message-ID: <9407247777.AA777750353@mails.imed.com>
Source record: 116594

In article <336ml9$cp5@search01.news.aol.com> jimcan@aol.com "JimCan" writes:
> I have just finished assembling my first crystal radio, and it doesn't
> work. I'll try to explain my situation, and maybe somebody out there knows > of a possible problem?
>
[stuff deleted]
> Thanks, JimCan
>
<<Are you *sure* you are using the correct 'phones - high-impedance?
<<They are quite difficult to get hold of nowadays. Standard
<<low-impedance ones will just load the tuned circuit right down. Try
<<using a crystal earpiece, or
<<a step-down AF Xformer if you are using the wrong type.

<<Leon

I concur with Leon that you probably need to use a step down transformer for use with "normal" earphones. The following is a list of Radio Shack components to check against what you are using for a workable crystal set:

Transformer: 273-1380 1k to 8 ohms (1k side goes to diode)
Diode: 276-1123 1N34A This is germanium NOT silicon!
Capacitor 272-1336 this is a trimmer but it should work
coil 273-102 this is an interference choke but I have used it for this purpose.

You could also use the piezo speaker from Radio Shack P/N 273-091 instead of an earphone and transformer. It won't be high fidelity but you won't get that from a crystal set anyway!

If you have any more questions feel free to e-mail me.

Ray
WD5IFS
mack@mails.imed.com

2407. Re: 2M to FM bcast band converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 16:50:46 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <15048@uugate.wa7slg.ampr.org>
Source record: 116595

You are right: The selectivity of this thing would be pretty rotten, but
it would be 'kinda a fun project to just do it to learn... Actually,
it would be pretty easy to throw together...

For the 48 MHz LO, I'd get one of those "canned" oscillators. Frequencies
around (and including) 48 MHz are pretty easily found. They have relativly
high output, and are easy to use. Best of all (in this application) their
relativly sloppy tolerances are of little consequence.

I would go with the following lineup:

Ant >--- 2 meter BPF --- 2 meter preamp --> JFET mixer <--- 48 MHz osc.
l
l
Output to B'cast rx

About a lineup like the above: First of all, you are very likely
to have a number of FM BC stations in the IF frequency range, so you'll
need to worry about keeping them out on two fronts: NOT getting
into the mixer in the first place, and NOT "leaking" into your
FM-BC receiver.

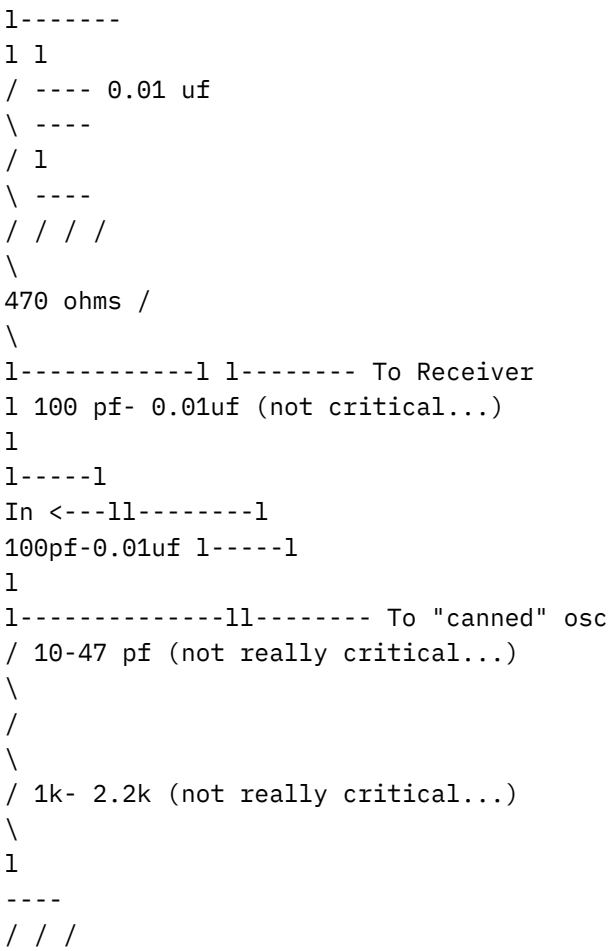
A lot of the newer BC receivers have provisions for a coaxial input (75
ohms) and are actually fairly-well shielded (i.e. no antenna, nothing
received at all...) Most receivers, though, are abysmal in that respect.

In the latter case, you may want to 'tweak' the receiver to tune from,
say, 108-112 MHz. The radiation from this gizmo is unlikely to cause
any planes to fall from the sky:-) You should be able to find a 36 MHz
'canned' oscillator, BTW, to accomodate this change.

On the former concern, that explains the 2 meter BPF. It really ought to
be pretty tight. I've built my own Xverters for 6, 2, 440, and 1.2 and
on the 2 meter xverter, its image would (and does) land in the FM BCB,
but I have no problems since I use a good BPF (and it *is* well
shielded...) If you look in a recent ARRL Radio Amateur's Handbook
(you *do* have one of those, don't you, and why not??? I get a new
one about once every 5-6 years... Enough has changed by then:-)
you'll see at least one 2 meter transverter article in the 'VHF Radio
Equipment' section. Plagiarize that... (and I'll get a spelling dictionary,
too...) and build a filter...

The mixer is/can be pretty easy. For something as low performance as this,
a simple JFET mixer would work well. Do this:

+6 to +12 volts
/\



(Oops, add a 100k-1 meg resistor from the gate to ground...)
The Source lead is the one on the bottom, BTW... and the tansistor
(oops) TRANSISTOR is something like the MPF102

This mixer actually has a fairly decent dynamic range and, being an
active device, is not particularly sensitive to its source and load
terminations with respect to IMD. A mismatch is more likely to cause
attenuation, actually... In fact, the "bipolar" version of this mixer
is used in most HT's... (Now you know why they generate intermod
so badly... Wait... They do a *good* job of generating IMD, don't they...:-)
The FET mixer generally has much better IMD specs than its bipolar equivalent.
(Reduce your undesired signal by 1 db, and you lose 3db of the IMD...)

I'd just try putting the output of the mixer into the input of the receiver,
myself. I *may* actually try a 300->75 ohm balun, too (you have to figure
out which side of the 300 ohm input is connected to the 75 ohm shield... if
it *is* connected like that...) and that would match it better, but this
isn't a high-performance unit anyway, is it?

Another thing: Going through the math, you may notice where a harmonic
of your LO lands... (48*2 = 96...) This signal will be *STRONG* and may
clobber a lot of the received band...

One thing about mixers: They can make good frequency multipliers...

One final thing about the mixers: If you use a diode-ring mixer (for my money, that's the best choice if you can afford the LO... power-wise and otherwise) you ***MUST*** pay attention to the terminations on all of its ports to preserve IMD specs.

On the output of the mixer, I wouldn't bother with any filtering since your radio likely has some it it already...

It sounds to me as though you already know how well this is likely to work, but it should work as well as you expected:-)

73

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

2408. Re: Where to buy kits?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 18:51:54 UTC
From: landisj@drager.com
Message-ID: <1994Aug24.145154.138@drager.com>
Source record: 116600

In article <337t36$7t7@usenet.INS.CWRU.Edu>, sct@po.cwru.edu (Stephen C. Trier) writes:
> In article <znr777437775k@crl>,
> Dennis Rice <drice@crl.com> wrote:
>> What are the best sources for kits for amplifiers, receivers,
>> transmitters, antennas, etc.
[lots of good info from Stephen trimmed to save b/w]

For antennas, I must also recommend Bill Orr's books: The Beam Antenna Handbook, which has a lot of good design and construction information on Yagis, LPDA's and quads. I also believe that he has published a more generic Antenna Handbook, which is probably worth checking out too.
Joe - AA3GN
--
Joe Landis - System & Network Mgr. - North American Drager Co. Telford, PA
landisj@drager.com | uupsi5!main03!landisj | AA3GN@WA3TSW.#EPA.PA.USA
Opinions are mine only, and do not reflect those of my employer.
...Munging Until No Good...

2409. ss delay relay ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 19:46:52 UTC
From: daniels@jeeves.ucsd.edu
Message-ID: <72134@sdcc12.ucsd.edu>
Source record: 116606

I've got an Omnetics Inc. solid-state delay relay that I need
the pin-out for. Part # MMS115A5Y60A, with four spade lugs
numbered 1 - 4. The surplus shop I got it from says it's an
adjustable delay, but I'm pretty sure it's a fixed 60-sec delay.
Does anyone have any information on this part or know the
address/phone # of Omnetics?
Many thanks for any help mark daniels
daniels@jeeves.ucsd.edu

2410. Flavor radio SW?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 20:42:07 UTC
From: amw@fc.hp.com
Message-ID: <33gbav$mr5@tadpole.fc.hp.com>
Source record: 116597

I'm looking for information on taking a cheap Radio Shack AM radio (The colored ones they sell as "Flavoradio's") and adding a selector switch and a set of coils to change the frequency range to allow SW reception.

There was an article on doing this in one of the electronics mags (Radio Electronics, Popular Electronics, ...) two or three years ago but I just saw it in passing and can't remember which magazine or when it was printed (My best recollection is that it was Nov-Dec-Jan of '91).

If anyone remembers this or has some general comments on this type of conversion, let me know.

Andy Weilert
amw@fc.hp.com

2411. Re: 2 M to FM Broadcast Reply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 20:46:28 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cv24DG.Cvu@news.Hawaii.Edu>
Source record: 116598

In article <9407247777.AA777747053@mails.imed.com> mack@mails.imed.COM (Mack Ray) writes:
> Jeff:
>
> This sounds like a good idea on the surface, but it has some very
> serious technical problems. FM broadcast is wideband FM (VERY
> wideband) whereas amateur is narrow band. The bandwidth of an amateur
> signal is about 15KHz (give or take a little) with channels either
> every 15KHz or 20KHz depending on where in the US you are. If things
> have changed in the last 5 years they may all be 20KHz now. Broadcast
> bandwidth is 200KHz. So you see if you use the broadcast radio you
> will actually be listening to 10 amateur frequencies at once.

Hi Ray: I did mention this in my article when I said:

``...the selectivity will be awful (what's the bandwidth of an FM
station?)....''

but in an area with few active repeaters (such as here in Hawaii) it
might not be too bad. Hadn't thought about the low audio, though; I'll
just turn the volume up ;)

Remember, this project is just for fun - don't take it or me too
seriously.

Jeff NH6IL

2412. Re: 2M to FM bcast band converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 20:55:34 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cv24sM.D23@news.Hawaii.Edu>
Source record: 116599

In his excellent reply to my idea ka7oei@uugate.wa7slg.ampr.ORG writes:
>
> If you look in a recent ARRL Radio Amateur's Handbook
>(you *do* have one of those, don't you, and why not??? I get a new
>one about once every 5-6 years... Enough has changed by then:-)

Ummm, I like to let a little more time go by than 5-6 years; I have
the 1950, 1972 and 1991 editions. I'll wait until about 2010 to
get another.

73 and thanks for your valuable ideas.

Jeff NH6IL

2413. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 20:57:00 UTC
From: dbell@cup.portal.com
Message-ID: <120749@cup.portal.com>
Source record: 116601
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

>>The "super-regenerative" receiver (detector) should also be considered in
>>the discussion. I never understood how they worked,...

>These things have always puzzled me too.
>As my current understanding goes, an oscillator tuned to the
>approximate frequency of reception is periodically stopped and then
>allowed to restart at a rate of, say, 40KHz. If some received
>energy at the right frequency is coupled into the resonant
>circuit, the restart tends to be quicker, with a noticable effect
>on the current drawn by the oscillator.

>The current drawn by the oscillator contains the output signal.

>Is this how it works?

>Best regards,
>Jeroen Belleman

Not to my recollection... I missed earlier portions of this
thread, but as I understood it, the regenerative circuit was
an attempt to boost gain of a receiver stage by adding positive
feedback, up to *almost* the point of oscillation. If this
point was exceeded, the receiver would become a transmitter,
and all received signal would be swamped by the oscillator's
current. The super-regen was a design that eliminated the
critical hand-tuning of the regen (which had been by tuning
the feedback control for each received signal) by allowing
the stage to go into oscillation, which (mumble, mumble)
increased grid current, which built up a DC voltage by
charging a cap across a multi-meg grid-leak resistor, which
reduced the gain, driving it out of oscillation... The effect
was similar to a sawtooth relaxation oscillator controlling
the gain (via grid bias) of the amplifier stage. The operating
points were chosen so that the stage 'hovered' about the critical
gain level, getting a voltage gain of thousands(?) from a single
amplifier stage.

Or, something to that effect... :{)

Dave
dbell@cup.portal.com

2414. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 22:37:17 UTC
From: wayne@fc.hp.com
Message-ID: <33gi2t$q1i@tadpole.fc.hp.com>
Source record: 116602
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

> As my current understanding goes, an oscillator tuned to the
> approximate frequency of reception is periodically stopped and then
> allowed to restart at a rate of, say, 40KHz. If some received
> energy at the right frequency is coupled into the resonant
> circuit, the restart tends to be quicker, with a noticable effect
> on the current drawn by the oscillator.

> The current drawn by the oscillator contains the output signal.

> Is this how it works?

This is what I remember. These were used mostly on VHF? Maybe ancient versions of the ARRL Handbook have good explanations of what is going on.

Wayne

2415. Help designing Capacitor Impedance Match Network

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-24 23:28:21 UTC
From: David_Shalita.ES_AE@xerox.COM
Message-ID: <"24-Aug-94.16:28:21.PDT".*.D.R._Shalita.ES_AE@Xerox.com>
Source record: 116607

To: qrp-digest@think:com Ham-Homebrew@UCSD.Edu
8-24-1994

Hi all,
I need help calulating the capacitor values in this capacitor impedance matching network. See enclosed figure.

1. Given:
LC tank, L = 4.7 uh, Q =40, F operating = 10.7mhz, TOKO PN TK3149
Tank fed from NE-602 Mixer output pin 4, source Z = 1.5 K.
FL1 10.7 mhz Ceramic Filter, TOKO type CFSK TK2306

2. I calculated Ctotal to resonate tank at 10.7 mhz, = 47 pf's

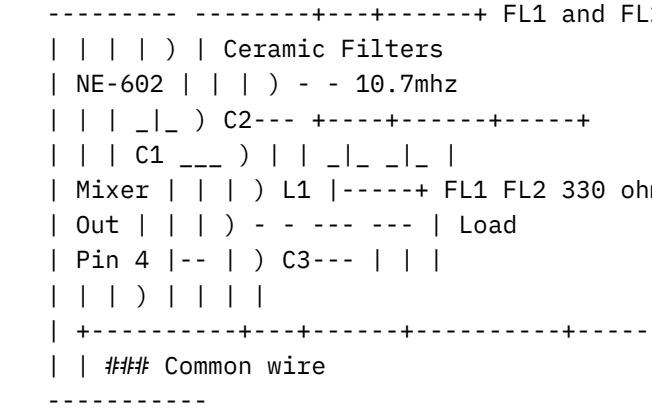
3. The capacitive divider tank must match 1.5K mixer output to the Ceramic filter FL1 which requires 330 ohm input termination.

4. I need help with design info method for converting 47pf into 2 or 3 capacitors for the capacitive divider.

5. Need a general solution to handle any practical impedance match.

6. Could use a reference. I have looked unsuccessfully.

==========
f0=10.7mhz



Zo source of Pin 4
from NE-602 mixer
is 1.5 K

==========
Thanks for any help,
73 Dave, w6mik

2416. FM transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 00:12:16 UTC
From: asnyder@vt.edu
Message-ID: <33gnl0$lvd@solaris.cc.vt.edu>
Source record: 116603

I was looking for the schematics on how to build a FM transmitter,
maybe even a transceiver later on down the road. I have the schematics for
one that was e-mailed to be, but it never worked. I would like it to be simple
if possible. Any help would be appreciated.
*
* Art

2417. Re: 4-1000 Homebrew Amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 00:21:12 UTC
From: ells22@aol.com
Message-ID: <33go5o$8pl@search01.news.aol.com>
Source record: 116605

In article <CuyKz8.E66@ncrcae.ColumbiaSC.NCR.COM>, Tom Skelton
<Tom.Skelton@ClemsonSC.NCR.COM> writes:

TOM, I AM PLANNING A PASSIVE GRID CIRCUIT with screen voltage. Are you aware of this technique? I have had one reply by someone aware of this and it sounds ok . The idea is a universal Amp for all HF as needed. I'm also using a Powerstat on the Plate, screen and filament so I should be ready for any eventuality. I already had most of the parts. How big a plate capacitor do you want? I do run into them from time to time. I managed to acquire vacuum caps for this one.

Thanks for the comments. Any info is most welcome. Gud Luk with your "Ne plus ultra"

73 & gud DX Russ Ellsworth WA6CWV..Boise, Idaho

2418. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 00:30:45 UTC
From: kevin@novell.com
Message-ID: <1994Aug25.003045.10635@novell.com>
Source record: 116604
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <1994Aug22.134836.8674@dxcern.cern.ch> jeroen@dxcern.cern.ch (Jeroen Belleman) writes:
>In article <fred-mckenzie-1708941430140001@128.159.123.111>,
>Fred McKenzie <fred-mckenzie@ksc.nasa.gov> wrote:
>>The "super-regenerative" receiver (detector) should also be considered in
>>the discussion. I never understood how they worked,...
>
>These things have always puzzled me too.
>As my current understanding goes, an oscillator tuned to the
>approximate frequency of reception is periodically stopped and then
>allowed to restart at a rate of, say, 40KHz. If some received
>energy at the right frequency is coupled into the resonant
>circuit, the restart tends to be quicker, with a noticable effect
>on the current drawn by the oscillator.
>
>The current drawn by the oscillator contains the output signal.
>
>Is this how it works?

That is pretty accurate. Usually the circuit can be made to be self quenching by utilizing the base emitter junction to charge up a suitable time constant RC network so that the transistor is biased off and oscillation stops.

They are commonly used for garage door opener receivers, burglar alarms X-10 RF remote control in the 300 MHz range, they can be very simple and low power but fairly sensitive (1 microvolt).

My first radio control receiver I built 30 years ago used this technology which was originally developed in the 30's.

They are very broadly tuned, and have a very high noise output on no-signal. They are also very tricky to design and get going. I find it helps if the transistor is fairly close to its maximum frequency, otherwise it oscillates too readily and is not very sensitive.

kevin white

2419. handicnt.zip - Optoelectronic 3000A & M1 handicounter reviews

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 02:41:56 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <9408250241.kp9000@SimTel.Coast.NET>
Source record: 116608
Cross-posted to: comp.archives.msdos.announce,sci.electronics,rec.radio.scanner,rec.radio.amateur.homebrew

I have uploaded to the SimTel Software Repository (available by anonymous ftp from the primary mirror site OAK.Oakland.Edu and its mirrors):

SimTel/misc/hamradio/
handicnt.zip Optoelectronic 3000A & M1 handicounter reviews

handicnt.zip contains two text documents, reviewing Optoelectronic's 3000A and M1 handicounters, capable of time domain measurements on directly coupled and RF signals up to the gigahertz range. These have attained leading market position and are advertised in most Amateur Radio/electronic magazines. I have owned both of these meters and after running them them through the ringer, summarized my findings in these technically accurate reports, unbiased by advertisement dollars. Other users and possible owners will be interested in what they can - and can't - do.

FreeText. Uploaded by the author.

Brian Mork
bmork@opus-ovh.spk.wa.us
ka9snf@ka7fvv.#ewa.wa.usa
6006-B Eaker, Fairchild, WA 99011
V:509-244-3764 D:509-244-9260

2420. mlhacker.zip - Zenith Minisport docs, hints, hacks & goodies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 02:42:38 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <9408250242.kp9054@SimTel.Coast.NET>
Source record: 116609
Cross-posted to: comp.archives.msdos.announce,comp.sys.zenith,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

I have uploaded to the SimTel Software Repository (available by anonymous
ftp from the primary mirror site OAK.Oakland.Edu and its mirrors):

SimTel/msdos/packet/
mlhacker.zip Zenith Minisport docs, hints, hacks & goodies

mlhacker.zip is a compendium of newsletters about the Zenith Minisport
laptop computer and its use as a packet radio host computer. Zenith
offers only minimal and expensive support for this popular but
discontinued 8086 compatible notebook computer. Newsletters contain
technical notes, construction projects, operating hints, resources,
architecture details and other related goodies. The Minisport Laptop
Hacker series is the result of owning and repairing Minisports and
donations from others on Internet and the Amateur Radio packet networks.

Special requirements: None

Changes: Compendium includes Minisport Laptop Hacker #1 - #22.

FreeText. Uploaded by the author.

Brian Mork
bmork@opus-ovh.spk.wa.us
ka9snf@ka7fvv.#ewa.wa.usa
6006-B Eaker, Fairchild, WA 99011
V:509-244-3764 D:509-244-9260

2421. Re: Question from a newbie

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 06:12:40 UTC
From: enigma@SEDS.LPL.Arizona.EDU
Message-ID: <33hcoo$arf@news.CCIT.Arizona.EDU>
Source record: 116610

Hi there:
Does anybody know where I can get the source code for Baycom or anything like it?

Thanks in advance!
Andrew Tubbiolo
Enigma@SEDS.lpl.arizona.edu
KC7BHW
Phys 415a

2422. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 08:07:18 UTC
From: dave@eram.esi.com.au
Message-ID: <33hjfm$jtk@eram.esi.com.au>
Source record: 116611
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <33gi2t$q1i@tadpole.fc.hp.com>,
wayne@fc.hp.com (Wayne Covington) writes:

| > As my current understanding goes, an oscillator tuned to the
| > approximate frequency of reception is periodically stopped and then
| > allowed to restart at a rate of, say, 40KHz. If some received
| > energy at the right frequency is coupled into the resonant
| > circuit, the restart tends to be quicker, with a noticable effect
| > on the current drawn by the oscillator.
| > Is this how it works?
|
| This is what I remember. These were used mostly on VHF? Maybe ancient
| versions of the ARRL Handbook have good explanations of what is going
| on.

Sure that's not a SUPER-regenerative receiver? "Super" meaning
super-sonic i.e. the chopping frequency.

--
Dave Horsfall (VK2KFU) | dave@esi.com.au | VK2KFU @ VK2AAB.NSW.AUS.OC | PGP 2.6
Opinions expressed are mine. | E7 FE 97 88 E5 02 3C AE 9C 8C 54 5B 9A D4 A0 CD

2423. Re: Help designing Capacitor Impedance Match Network

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 14:30:59 UTC
From: dmiller@crl.com
Message-ID: <33i9v3$jla@crl2.crl.com>
Source record: 116612

David_Shalita.ES_AE@xerox.COM wrote:
:
: To: qrp-digest@think:com Ham-Homebrew@UCSD.Edu
: 8-24-1994
:
: I need help calulating the capacitor values in this capacitor impedance
: matching network. See enclosed figure.
:
: 1. Given:
: LC tank, L = 4.7 uh, Q =40, F operating = 10.7mhz, TOKO PN TK3149
: Tank fed from NE-602 Mixer output pin 4, source Z = 1.5 K.
: FL1 10.7 mhz Ceramic Filter, TOKO type CFSK TK2306

Since you are using a relatively low Q inductor, it will be advisable to
lump the equivilent parralel resistance of the coil with the source
resistance ov the NE602. The Rp of the inductor is approximately 12.6K.
The 12.6K should be added in parrallel with the 1.5K for a virtual source
impedance of 1340 ohms. You really want to match 1320 ohms to 330.
:
: 2. I calculated Ctotal to resonate tank at 10.7 mhz, = 47 pf's

Correct.
:
: 3. The capacitive divider tank must match 1.5K mixer output to the
: Ceramic filter FL1 which requires 330 ohm input termination.

...or 1340 to 330 as per the adjustment I mentioned earlier :)

:
: 4. I need help with design info method for converting 47pf
: into 2 or 3 capacitors for the capacitive divider.

There are two simultaneous equations that you need to solve:

(C2*C3)/(C2+C3) = 47*10^-12 so that you get 47 pF

(C2/(C2+C3))^2 = Rout/Rin = 330/1340

In this case, the caps are almost equal since the impedance ratio is
very close to 4:1. Use C2=C3=100pF
:
: 5. Need a general solution to handle any practical impedance match.
:

For circuit Q's greater than 10, the procedure I outlined is general.

: 6. Could use a reference. I have looked unsuccessfully.

Solid State Radio Engineering, Herbert L. Krauss, John Wiley & Sons,
1980, ISBN 0-471-03018-X, pp 48-53

--

Don Miller My opinions are my own!
dmiller@crl.com

2424. Re: 40m ANT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 15:33:14 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <33idjq$n5f@info2.rus.uni-stuttgart.de>
Source record: 116614

Hi Rob,

Two friends of mine (DL3SDN, DL6SDW) solved the very same problem
with a long wire hung out of the window and along the lamp posts
in the street. 80 or so meters long. It works fine for DX.
I once used a quarterwave out of the window, but thats to short.

73, Moritz DL5UH

2425. Re: Active Filters (was Re: toroids)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 15:47:47 UTC
From: rtm@newton.apple.com
Message-ID: <rtm-250894084747@kip-17.apple.com>
Source record: 116468

> In article <493@ted.win.net>, Michael Silva <mjsilva@ted.win.net> wrote:
>
> >I'd like to hear more from those in the know on this subject. No
> >commercial gear still uses audio LC filters, does it? Is the TL071
> >series good enough for reasonable results (I've settled on these for
> >generic experimenting). I've got the "Active Filter Cookbook", how
> >good is it? What other easily-available references are recommended?
> >
> >Mike, KK6GM

Another approach is to look at switched capacitor filters, such as the
National MF10. You can get very good results with a little work. The
Kantronics KAM uses MF10's in its HF section for filtering. With switched
cap filters you don't have to worry about matching oddball component
values- the frequency is determined by the clock frequency to the filters.
Instead, you have to worry about digital noise, board layout, and very well
bypassed power supplies.

--
Bob Martin N6MZV * rtm @newton.apple.com
Apple Computer Inc * 408-974-4700
1 Infinite Loop MS 38-PAT * N6MZV @ N0ARY.#NOCAL.CA.USA.NOAM
Cupertino, CA 95014

2426. Re: WANTED: Source for Signetics NE604 or SA604 IF/FM detector chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 16:01:07 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <Cv3Ltw.3K1@news.ess.harris.com>
Source record: 116615

: : |> > I am trying to find a source for the Signetics NE604 or the equivalent

: Try 624 Kits, the last price list I had from them had it listed as
: $1.65 each, or 10 for $14.50. phone 803-573-6677.

: Another source is Dan's Small Parts and Kits.

: I've ordered parts from both and they are reliable.
: I don't have their addresses handy, check the back of QST or 73 magazines.

: - Gary N2JGU

MY MISTAKE... I was reading ne604 and thinking ne602. Sorry about
any inconvenience... again, my error.
- Gary N2JGU

2427. Re: Ham-Homebrew Digest V94 #252

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 16:01:22 UTC
From: Dale_Croft@comsys.rockwell.COM
Message-ID: <9407257778.AA777834082@SmtpSend.comsys.rockwell.com>
Source record: 116613

ref Ham-Homebrew Digest V94 #252
article: 24 Aug 94 19:46:52 GMT
From: ihnp4.ucsd.edu!sdcc12!jeeves!daniels@network.ucsd.edu
Subject: ss delay relay ?

> I've got an Omnetics Inc. solid-state delay relay that I need
>the pin-out for. Part # MMS115A5Y60A, with four spade lugs numbered
> 1 - 4. The surplus shop I got it from says it's an adjustable
> delay, but I'm pretty sure it's a fixed 60-sec delay. Does
> anyone have any information on this part or know the
> address/phone # of Omnetics? Many thanks for any help mark
> daniels daniels@jeeves.ucsd.edu

a quick look on a CD ROM data base yields
Omnetics ph # 315-699-5262
PO box 2577
Syracuse, NY, 13220-2577

Tech data is terse and does not include pin out:
115 vac spst 1 amp rms steady 20 ma min

The NSN data indicates the company was in process of being sold at
time the data was entered. CD-ROM data base is copy of Defense
Logistic Supply Center Data, No spares procurment history. No
other PN assigned to same NSN.

GOOD LUCK in applying it.
73, K5VMU
Dale_Croft@comsys.rockwell.com Integrated Logistic Support Mgr
My opionions may not be shared or endorsed by Rockwell, YMMV

2428. Wanted, PC board layout program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 16:09:18 UTC
From: ed@fore.com
Message-ID: <Cv3M7I.1FE@fore.com>
Source record: 116616

I have a need to have some pc boards made by a "board shop" and
want a pc layout program that will run on IBM compatable.

Absolute requirements are :

Gerber file generation
drilling coordinates file (cnc preferable)
do photo positive & negative images on laserjet. (for iron on prototyping)
Run on a 386 pc with a math co.
Under $500

Anybody have opinions on pc board programs?

Has anybody compiled previous posts on pc board programs?

73

Ed N3SDO
Ed@fore.com

2429. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 18:55:48 UTC
From: wayne@fc.hp.com
Message-ID: <33ipfk$d74@tadpole.fc.hp.com>
Source record: 116617
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Dave Horsfall (dave@eram.esi.com.au) wrote:
: In article <33gi2t$q1i@tadpole.fc.hp.com>,
: wayne@fc.hp.com (Wayne Covington) writes:

: | > As my current understanding goes, an oscillator tuned to the
: | > approximate frequency of reception is periodically stopped and then
: | > allowed to restart at a rate of, say, 40KHz. If some received
: | > energy at the right frequency is coupled into the resonant
: | > circuit, the restart tends to be quicker, with a noticable effect
: | > on the current drawn by the oscillator.
: | > Is this how it works?
: |
: | This is what I remember. These were used mostly on VHF? Maybe ancient
: | versions of the ARRL Handbook have good explanations of what is going
: | on.

: Sure that's not a SUPER-regenerative receiver? "Super" meaning
: super-sonic i.e. the chopping frequency.

: --

Yes, the poster who was speculating about their mode of operation was talking about SUPER.

Another poster has mentioned that superregenerative detectors are still used in some garage door opener receivers. Apparently they don't radiate enough energy to exceed FCC or CISPR limits.

Wayne

2430. Re: VFO drift questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 19:53:19 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <777844399snz@arkas.demon.co.uk>
Source record: 116469

In article <claude.777709448@bauv106>
claude@bauv.unibw-muenchen.de "Claude Frantz" writes:

> Do not forget that capacitors have drift too. Fortunatly you can use
> appropriate capacitors to compensate L's drift. Mechanical stability is
> mandatory. Use stable capacitors, some ceramic type C's are a good choice.

Hi Claude,

Yes, good point! I have a SWAN 500C which is my proof of this - I can only mention the fact that I haven't run it in about 10 years as the reason for forgetting this basic fact! :)

DeMaw & Hayward mention this fact, too, in "Solid State Design for the Radio Amateur". They say that one reason is especially found in high power oscillators: too much RF current drawn through a tuning capacitor causes internal heating, and this leads to the unintentional QSY. They feature a series-tuned Clapp which uses parallel capacitors in the series tuning element for this reason. I've actually built a variant of this VFO for a 40 m home-brew TCVR. It works well over 7.00 - 7.35 MHz range at least, and has a slight warm up drift. Once going, it will stay stable for hours! I use two buffer stages before feeding the signal to the tx & rx stages - this keeps the power drawn from the VFO circuit itself relatively low, and hence helps with rf currents in the tuning elements.

73's de vk2eng

--
Michael J Dower
'Quoth the raven, "Never more".' ... Poe

2431. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 20:51:16 UTC
From: mjsilva@ted.win.net
Message-ID: <515@ted.win.net>
Source record: 116473
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <1994Aug25.003045.10635@novell.com>, Kevin White (kevin@novell.com) writes:
>In article <1994Aug22.134836.8674@dxcern.cern.ch> jeroen@dxcern.cern.ch (Jeroen Belleman) writes:
>>In article <fred-mckenzie-1708941430140001@128.159.123.111>,
>>Fred McKenzie <fred-mckenzie@ksc.nasa.gov> wrote:
>>>The "super-regenerative" receiver (detector) should also be considered in
>>>the discussion. I never understood how they worked,...
>>
>>These things have always puzzled me too.
>>As my current understanding goes, an oscillator tuned to the
>>approximate frequency of reception is periodically stopped and then
>>allowed to restart at a rate of, say, 40KHz. If some received
>>energy at the right frequency is coupled into the resonant
>>circuit, the restart tends to be quicker, with a noticable effect
>>on the current drawn by the oscillator.
>>
>>The current drawn by the oscillator contains the output signal.
>>
>>Is this how it works?
>
>That is pretty accurate. Usually the circuit can be made to be self quenching
>by utilizing the base emitter junction to charge up a suitable time constant
>RC network so that the transistor is biased off and oscillation stops.
>
>They are commonly used for garage door opener receivers, burglar alarms
>X-10 RF remote control in the 300 MHz range, they can be very simple and
>low power but fairly sensitive (1 microvolt).
>
>My first radio control receiver I built 30 years ago used this technology
>which was originally developed in the 30's.
>
>They are very broadly tuned, and have a very high noise output on no-signal.
>They are also very tricky to design and get going. I find it helps if the
>transistor is fairly close to its maximum frequency, otherwise it oscillates
>too readily and is not very sensitive.
>
By chance, I had access to some old QST's a while back and happened to
come upon issues dating to the "dawn" of the superregen, so maybe I can
add a little background. The concept, invented by Armstrong, was
introduced to the world in 1922, and it was immediately heralded as the
receiver of the future, rendering current technology (regeneration)
obsolete. Most of the original circuits actually used a separate
oscillator to provide the switching signal to the received-frequency

oscillator (terminology my own!). Within a few months, the euphoria was wearing off, and QST was publishing articles asking "how come our superregens aren't any better?" Within a year they seem to have faded from amateur view, although they did resurface with the move into 10, 5 and 2.5 meters in the late '20s / early '30s.

For anyone interested in a great story on the early days of radio, let me recommend "Empire of the Air" by Tom Lewis (I think, not in front of me), published about two years ago.

Mike, KK6GM

2432. Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 22:54:38 UTC
From: greg@core.rose.hp.com
Message-ID: <Cv44z2.3CM@icon.rose.hp.com>
Source record: 116471

All this talk about matching 75 ohms to a typical ham tranceiver reminds me of a question I had... BTW, most I have asked this suggest I just try it and see what happens :-)

A resonant dipole antenna (yes, in the mythical Free Space) has an impedance of 70-odd ohms. If you hook it directly to a 50 ohm coax you will see a 1.5:1 SWR. You can trim the antenna to make it look like 50 ohms, but now it's not resonant any more, and isn't 50 ohms *resistive*; there's a reactance component to it. Also, a non-resonant antenna isn't as "good" as a resonant one.

So, what are the alternatives? One idea is to use 70-odd ohm coax (TV Stuff) at the antenna end. Perfect match. The problem is how to hook that coax to your 50 ohm tranceiver. If you just hook it up, you'll have that 1.5 : 1 SWR again. One school of thought is that at least this way the non-perfect SWR isn't over a long cable run, so your losses will be less, and maybe that is a better arrangement than the 50 ohm coax and a mis-match at the antenna, or shortening the antenna to fake out the feed point impedance.

50 to 75 ohm transformers don't appear to be readily accessable, and you will loose something in the translation. Don't know if that's better than the SWR mismatch (at one of the ends), or the shortened antenna.

So, all you Dipole Experts, what is the right answer? Yes, this is somewhat accedemic, since you never really have a mythical Free Space antenna, but at least you will be starting from a technically sound design.

Your thoughts?

Greg KD6KGW

2433. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-25 22:59:54 UTC
From: zcapl34@ucl.ac.uk
Message-ID: <1994Aug24.104341.32473@ucl.ac.uk>
Source record: 116470

hbrown@nadir.resd (Harry H. Brown) writes:

>The older ARRL Handbooks should be a good source for higher power tube amplifiers. Try your local library or one of the "older" hams in your area. There have been conversion articles for the Heath SB220 to 6 meters (2 3-500Z's), also 8930's for 400 to 500 watts out.

>73,
>Harry, W3IIT

I am currently building a 250W carrier, 350W SSB linier amplifier for 10m, 6m and 4m (28Mhz, 50Mhz and 70Mhz respectivly) using a single 4CX250. Lovely little valve... 2 of them in push-pull gives yo 1K SSB if you use a certain configuration.

Red, GW0TJO

2434. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 00:51:32 UTC
From: rkarlqu@scd.hp.com
Message-ID: <33jeak$sl3@hpscit.sc.hp.com>
Source record: 116472

In article <Cv44z2.3CM@icon.rose.hp.com>,
Greg Dolkas <greg@core.rose.hp.com> wrote:
>
>A resonant dipole antenna (yes, in the mythical Free Space) has an impedance
>of 70-odd ohms. If you hook it directly to a 50 ohm coax you will see a
>1.5:1 SWR. You can trim the antenna to make it look like 50 ohms, but now

>So, all you Dipole Experts, what is the right answer? Yes, this is somewhat
>accedemic, since you never really have a mythical Free Space antenna, but
>at least you will be starting from a technically sound design.
>
>Greg KD6KGW

It isn't just that you're not in free space. The 73 + j40 ohms or whatever
it is is the impedance for a *infinitesimally thin* dipole. Real dipoles
are well down into the 60 ohm's or even the 50's.

Another error is end effect, which also helps to lower the input impedance
(like end loading would).

So the actual VSWR is only 1.2 or 1.3 to 1. Hardly worth worrying about.

If it's really important to you to get a 50 ohm input impedance, cut
your dipole about 10 to 15% short of a half wave and put in loading coils
to resonate it. Then you can hit 50 ohms exactly.

Rick N6RK
rkarlqu@scd.hp.com

2435. Re: 2M to FM bcst band converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 04:25:39 UTC
From: mzenier@netcom.com
Message-ID: <mzenierCv4KAr.Aqq@netcom.com>
Source record: 116474

Jeffrey Herman (jeffrey@kahuna.tmc.edu) wrote:
: Here's a project I've always wanted to build: a 2M to FM broadcast band
: converter (i.e. a converter with a tunable 100 MHz IF). I've seen lots
: of 2M converters that use other IF's for non-FM reception (see any of
: the older ARRL Handbooks and VHF Manuals).

: I intend on modifying the bandspread of the bcst band receiver to cover just
: 96 to 100 Mc so that the entire 2M band will be spread over the entire
: tuning range of the receiver (by changing the fixed capacitance in
: parallel with the tuning cap).

Why not just modify the FM receiver. I got a Scott 515 tuner up to 155-160 MHz. Had to wind a new LO coil but the front end didn't need replacment. Found out just how boring some of the local 2 meter repeaters could be. ;-) The actual reason was to see if I could get it up to the 137 MHz weather satellite frequencies, but this tuner was so much better than any other FM receiver I have, I tuned it back. GASFET front end, and all that. Bought it at a used stereo store for $30. If you really wanted to, you could replace the 10.7 ceramic filters with something narrower, although you might have to do some digging to find them. Like get them out of a broken scanner, or as replacment parts for same.

Or back to original method, use an TV tuner. With an older (say turret type) tuner, the LO would be right somewhere around channel 10. Retune the input from 200 something MHz, and redo (or remove) the output filtering from 40-45 MHz to your FM band segment. (You must have some of them left over from your CW transmitter parts supplies.)

Mark Zenier mzenier@netcom.com mzenier@eskimo.com

2436. Re: 40m ANT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 06:13:11 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cv4pA0.C2A@news.Hawaii.Edu>
Source record: 116475

In article <33idjq$n5f@info2.rus.uni-stuttgart.de> deap1032@servus11.rus.uni-stuttgart.de (Bruegemann) writes:
>Hi Rob,
>
>Two friends of mine (DL3SDN, DL6SDW) solved the very same problem
>with a long wire hung out of the window and along the lamp posts
>in the street. 80 or so meters long. It works fine for DX.
>I once used a quarterwave out of the window, but thats to short.

This sounds familiar. I've used a streetlight post as an antenna support - tossed a weighted fishing line over the light's arm (overhand!) and tied that to my antenna wire (used small diameter speaker wire - almost invisible). Also, the fire hydrant plug made a great ground connection, using the city's watermains as my counterpoise.

I must thank the city some day for supporting my antenna system.

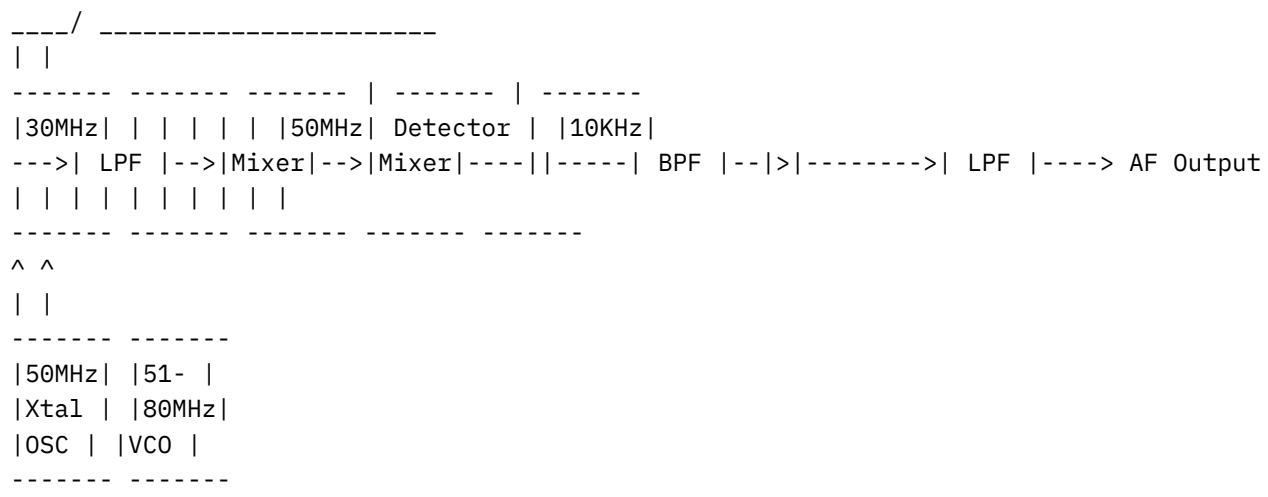
Jeff NH6IL

2437. AM/SSB Receiver Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 07:47:26 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <33k6me$mmo@franklin.cc.utas.edu.au>
Source record: 116476

Hello All,

I am planning to build a simple SW receiver based on my own design with AM and SSB modes and have come up with the following:



The idea is that the SW band is shifted up by 50MHz so that the whole band can be tuned by a VCO with a single tuned circuit, no band switching necessary.

With the AM/SSB switch open a 50MHz band pass filter preceeding a diode detector enables the reception of AM signals. With the switch closed the signal after the first mixer is direct tuned for SSB/CW reception.

I hope someone can answer some of my questions:

1. Is there anything fundamentally wrong with this idea?
2. Would a parallel LC circuit be sufficient for the 50 MHz BPF?
3. Will a diode detector work OK at 50Mhz?
4. What sort of front end would be OK?

I am a beginner to RF stuff so any help would be most gratefully accepted,

Ian.

2438. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 12:47:37 UTC
From: peter_simpson@3com.com
Message-ID: <3074@bridge2.NSD.3Com.COM>
Source record: 116486

There's a nice cheap design for a 3 transistor 5 - 15 Mhz regenerativ
receiver in this week's EDN (8/18/94). It's in the Design Ideas
section, page 98. Charles Kitchin of Analog Devices is the author.

Peter Simpson, KA1AXY Peter_Simpson@3com.com
3Com Corporation (508) 836-1719 voice
Northborough, MA 01532 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

2439. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 14:53:28 UTC
From: jholly@cup.hp.com
Message-ID: <Cv5DD5.L1F@cup.hp.com>
Source record: 116477

Greg Dolkas (greg@core.rose.hp.com) wrote:

: All this talk about matching 75 ohms to a typical ham tranceiver reminds me of
: a question I had... BTW, most I have asked this suggest I just try it and see
: what happens :-)

: A resonant dipole antenna (yes, in the mythical Free Space) has an impedance
: of 70-odd ohms. If you hook it directly to a 50 ohm coax you will see a
: 1.5:1 SWR. You can trim the antenna to make it look like 50 ohms, but now
: it's not resonant any more, and isn't 50 ohms *resistive*; there's a
: reactance component to it. Also, a non-resonant antenna isn't as "good"
: as a resonant one.

: So, what are the alternatives? One idea is to use 70-odd ohm coax (TV Stuff)
: at the antenna end. Perfect match. The problem is how to hook that coax to
: your 50 ohm tranceiver. If you just hook it up, you'll have that 1.5 : 1
: SWR again. One school of thought is that at least this way the non-perfect
: SWR isn't over a long cable run, so your losses will be less, and maybe that
: is a better arrangement than the 50 ohm coax and a mis-match at the antenna,
: or shortening the antenna to fake out the feed point impedance.

: 50 to 75 ohm transformers don't appear to be readily accessable, and you will
: loose something in the translation. Don't know if that's better than the
: SWR mismatch (at one of the ends), or the shortened antenna.

: So, all you Dipole Experts, what is the right answer? Yes, this is somewhat
: accedemic, since you never really have a mythical Free Space antenna, but
: at least you will be starting from a technically sound design.

: Your thoughts?

: Greg KD6KGW

75 to 50 ohm transformers are easily made. The ARRL handbook has had
construction information. The loss is very low.

Use open wires and a matching unit. Make the dipole long enough for 80 meters
and you have a all band antenna.

Use only a single support and make an inverted vee. These tend toward a
50 ohm impedance.

Use 50 ohm cable and don't worry about the SWR, unless you have a rice
box that shuts down at 1.5, then use a matching unit.

Really, a 1.5:1 SWR is not anything to lose sleep over.

Jim, WA6SDM
jholly@cup.hp.com

2440. Ramsey 2m Amplifier Brick kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 15:07:29 UTC
From: ed@fore.com
Message-ID: <Cv5E0I.6xL@fore.com>
Source record: 116479

I am thinking of getting the Ramsey 2M Brick amp kit and the matching
tx relay.

Any experiences / opinions with this unit.

73

Ed N3SDO
Ed@fore.com

2441. Re: AM/SSB Receiver Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 16:52:25 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <33l6k9$gfi@info2.rus.uni-stuttgart.de>
Source record: 116480

Hello Ian,

Sorry to say so, but the receiver design is not going to work like this.
Having a high first IF is a good idea and common in modern communication
recievers. But implementation is not easy.

the stages will have to be:

1) input mixer wit VFO from 1-30 MHz to 80 MHz
2) !Quarz! filter, 20 or so kHz wide
3) 1st IF amp
4) mixer to 2nd IF (9MHz)
5) Quarz filters, 4kHz for am and 2,7 kHz for ssb.
6) detectors as usual.

Alone the VFO for 50 tu 80 MHz will be all but simple to get to work.

a simple receiver for HF is some thing like a direct conversion receiver.
but even than the VFO will be a problem.

Good luck, Moritz DL5UH

2442. 2M to FM broadcast converter???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 17:47:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E5E2B7F@msmail.uthscsa.edu>
Source record: 116478

Jeff, NH6IL writes in digest V94 #253:

>In his excellent reply to my idea ka7oei@uugate.wa7slg.ampr.ORG writes:
>>
>> If you look in a recent ARRL Radio Amateur's Handbook
>>(you *do* have one of those, don't you, and why not??? I get a new
>>one about once every 5-6 years... Enough has changed by then:-)
>>
>Ummm, I like to let a little more time go by than 5-6 years; I have
>the 1950, 1972 and 1991 editions. I'll wait until about 2010 to
>get another.
>
>73 and thanks for your valuable ideas.
>
>Jeff NH6IL

Please don't misunderstand my question...

Why would you want such a thing??

Even if you built one you can't receive FM broadcast signals
on a 2M FM receiver. The deviation is 75kHz wide! If would
overload your dedicator. You can't go the other way (receive
2M on an FM broadcast receiver). It is designed for the 75kHz
wide signals. You would have to crank the volume up all the
way to hear the audio. You DEFINITELY CAN'T TRANSMIT
ON BROADCAST BAND FM FROM YOUR 2M RIG THROUGH A TRANSVERTER!
For one, your rig is not FCC type accepted for that.
Secondly, you are limited to 1 miliwatt (1000 microvolts)
and 3' of antenna if you want to transmit on the FM broadcast
band.

2443. TNC emulation code.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 19:24:40 UTC
From: enigma@SEDS.LPL.Arizona.EDU
Message-ID: <33lfho$all@news.CCIT.Arizona.EDU>
Source record: 116483

Is there any TNC emulation code out there that I can use with a PSK modem
I'm working on?

Andrew Tubbiolo
Enigma@seds.lpl.arizona.edu
KC7BHW

2444. Re: FM transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 20:19:32 UTC
From: anto@gate.net
Message-ID: <33liok$7b3@tequesta.gate.net>
Source record: 116482

asnyder (asnyder@vt.edu) wrote:
: I was looking for the schematics on how to build a FM transmitter,
: maybe even a transceiver later on down the road. I have the schematics for
: one that was e-mailed to be, but it never worked. I would like it to be simple
: if possible. Any help would be appreciated.
: *
: * Art

Motorola makes a chip for cordless telephones (MC2833P) which with
a few additional components will meet your needs. Get a copy of the
Motorola RF data book. A design example is included. The chip is
available from sources like DC Electronics, Scottsdale, AZ for $1.75!
Call them at (800)467-7736.

--
Nigel Kirlew
anto@gate.net

2445. Re: Wanted, PC board layout program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 20:25:44 UTC
From: anto@gate.net
Message-ID: <33lj48$7b3@tequesta.gate.net>
Source record: 116481

Ed Bathgate (ed@fore.com) wrote:

: I have a need to have some pc boards made by a "board shop" and
: want a pc layout program that will run on IBM compatable.

: Absolute requirements are :

: Gerber file generation
: drilling coordinates file (cnc preferable)
: do photo positive & negative images on laserjet. (for iron on prototyping)
: Run on a 386 pc with a math co.
: Under $500

: Anybody have opinions on pc board programs?

: Has anybody compiled previous posts on pc board programs?

: 73

: Ed N3SDO
: Ed@fore.com

I use a relatively inexpensive program marketed by a company
called Ohio Automation Inc. in Athens, OH. It will do everything
you ask plus schematic capture for $195.00. I've been very happy
with it. They can be reached at (614)592-1810.

--
Nigel Kirlew, N4TKC
anto@gate.net

2446. Flavoradio SW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-26 22:19:12 UTC
From: gull@grex.cyberspace.ORG
Message-ID: <Pine.3.07.9408261812.A19741-a100000@grex.cyberspace.org>
Source record: 116487

```
I saw a circuit for this, using a regular AM radio to recieve SW.
Basically, the AM radio is left pretty much "as-is" and the output of a
converter, using an NE602, as fed into it. On a car radio, it's just fed
into the antenna jack, but on a regular AM radio you would feed it in at
the tuning capacitor. I have the schematic and other data in ASCII form;
if you're interested let me know and I'll Email it. Supposedly, it's pretty
sensitive; I haven't built one yet, as I don't have the NE602. (I've sent
for catalogs from a couple sources.)

-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
David Brodbeck gull@grex.cyberspace.org
Amateur packet (AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
```

2447. Re: 2M to FM broadcast converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 00:08:22 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cv631y.3wz@news.Hawaii.Edu>
Source record: 116484

In article <2E5E2B7F@msmail.uthscsa.edu> MUENZLERK@uthscsa.EDU (Muenzler, Kevin) writes:

>Why would you want such a thing??

For the same reason I build my own transmitters (QRP CW): Just for
the fun of it. Recall I said in my article that the project
was just for fun and not to be taken too seriously (for I knew
I'd get a flame or two).

>Even if you built one you can't receive FM broadcast signals
>on a 2M FM receiver.

Wow. Where'd you get the impression this is what I wanted to do?
The converter is from 146 Mc to 100 Mc not 100 Mc to 146 Mc.

>The deviation is 75kHz wide! If would
>overload your dedicator.

Huh? What's a dedicator?

>You can't go the other way (receive
>2M on an FM broadcast receiver).

Yes I can. I've done it. So far I've been able to hear a &%*$#@ paging
system. I'll tweek it down to 146 Mc - I believe it's in the low 150 Mc
range right now.

>It is designed for the 75kHz
>wide signals. You would have to crank the volume up all the
>way to hear the audio.

Yes, you would think so, but the audio level sounds fine. Don't forget
this converter is in front of a tuner - there's a seperate audio amp
that follows the tuner. In my article *I* mentioned the differences
in deviation - I thought it would be a problem but so far it's fine.

>You DEFINITELY CAN'T TRANSMIT
>ON BROADCAST BAND FM FROM YOUR 2M RIG THROUGH A TRANSVERTER!

You must have had a nightmare last night. This never was my intent.
I'll forward a copy of my original article to you so you can read
it more carefully.

I never mentioned a transverter, only a receiving converter. Know
the difference?

>For one, your rig is not FCC type accepted for that.
>Secondly, you are limited to 1 miliwatt (sic) (1000 microvolts)
>and 3' of antenna if you want to transmit on the FM broadcast

>band.

More hallucinations on your part. I've build a receiving converter
from 146 Mc to a 100 Mc I.F. Nothing was said about transmitting
on the FM bcst band. Also, you might want to peruse Part 15
concerning your statement above.

Also, watts and volts are different units: P = I*E

Recall I said that this project was just for fun and not to be
taken too seriously. Go have a beer, Kevin; it'll calm you down.

73,
Jeff NH6IL (ex WA6QIJ)

2448. AM Antenna question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 00:43:26 UTC
From: seanh@nucleus.com
Message-ID: <Cv64oF.2xq@nucleus.com>
Source record: 116485

Thank you very much, to all those who responded to my question.

Most of you guys told me that in commercial AM receivers, the coil wound around the ferrite rod is used as the pickup antenna. In the radio I told you I was building, I have tried using such a coil in my design, except that this has not given me adequate results. I also tried one from a commerical receiver -- this loopstick was actually composed of two seperate windings on a common ferrite core. Even when I tried to use either winding, I did not get adequate results. so there must be a certain way to hook up these coil properly...? Or perhaps my receiver does not have adequate gain to receive signals from these ferrite coil 'antennas'? Whenever I tried these ferrite coils I didnt even get a signal from the radio.

Thanks again for your help, you've already been quite helpful! If you could spare the time perhaps schematic diagrams could be useful, too.

- SVH

2449. Phase-locked Xtal Oscilla

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 01:25:00 UTC
From: geoff.kennedy@woodybbs.com
Message-ID: <93.1893.7584.0NFB2E9B@woodybbs.com>
Source record: 116493

Hi Y'all !!!

I would like to build a crystal-controlled oscillator which can be phase-locked to an input signal. Has anyone done this ??

The oscillator will operate at either 2.4576 or 4.9152 MHz, and must lock onto a 2.4 KHz audio tone (f/1024 or f/2048). Lock-in and tracking range must be +/- 2 Hz (relative to Fin). The input signal is often buried in noise.

Once locked, the oscillator should not drift too far if the input signal drops below threshold - fast lock-up and slow release.

Any ideas ??

Thanks in advance.

Geoff L. Kennedy
Fidonet address: 1:153/290

... Never anger a dragon, for thou art crunchy and go well with brie...
--- Blue Wave/Max v2.12
* Origin: Frog Hollow Port Moody BC 604-469-0264 (1:153/290)

2450. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 03:33:28 UTC
From: jmollan@egreen.iclnet.org
Message-ID: <1994Aug27.033328.15717@egreen.wednet.edu>
Source record: 116488

Easy, just turn the dipole into an inverted vee. As the ends are brought down, the impedance will approach 50 ohms +-.

73, John
AE7P

2451. MOTOROLA Expo DPL code plug information needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 16:38:23 UTC
From: ve1fc@nbnet.nb.ca
Message-ID: <ve1fc.25.0@nbnet.nb.ca>
Source record: 116489

Have an EXPO (Motorola) and need a DPL code plug for code 261.

Does anyone know how to jumper a code plug for this code ?

If so PLEASE let me know so as I can do it !!

Would be one HELL of a lot easier than jumpering one selection at a time.

There are 18 jumpers on the plug and doing it one at a time .... YAWN !!

Many thanks for a reply if you can tell me..

RGDS
Graham
ve1fc@nbnet.nb.ca

2452. Re: 440Mhz 50 ohm - 70 oh

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 21:55:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.1890.7584.0NFB2E96@woodybbs.com>
Source record: 116491

In <CuzwLp.Co6@fore.com>, Ed N3SDO wrote:

ED>I heard something very much like this, Using recycled catv lo loss
ED>semi rigid 75 ohm coax for 440. He said that for receiving the input Z
ED>is not that critical as long as you match the antenna to the line.
ED>If you feed your tv (75 ohm input) with a 50 ohm coax fed antenna, I dont
ED>expect that the tv will show much signal degredation. I suspect that the
ED>coax loss would be of more concern than the tv impedance mismatch.

ED>For transmitting you need to match the 50 ohm transmitter to the 75 ohm line
ED>for best possible results.
ED>If your antenna is a dipole it will be just fine with the 75 ohm line, if a
ED>gamma feed, adjust gamma for 75 ohm feed. I hear you can tune a ringo to ru
ED>with 75 ohm feed also.

That 75-ohm, semi-rigid cable will work just fine without any need to
match it to 50 ohms. The SWR resulting from a 75 to 50 ohm mismatch is
only 1.5 to 1. 100 feet of 3/4-inch hardline has about 1.7 db loss at
440 MHz when matched. With a 1.5 to 1 SWR you will get an additional
loss of LESS THAN 0.1 db!

Here's the best part. If you truly have an antenna with a 50-ohm
feedpoint impedance, cut the 75-ohm hardline to an exact multiple of
1/2-wavelength (taking into account the velocity factor of the line),
and your rig will see a 50-ohm load.

Art N2AH

2453. Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 21:55:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.1891.7584.0NFB2E97@woodybbs.com>
Source record: 116492

In <Cv44z2.3CM@icon.rose.hp.com>, Greg KD6KGW wrote:

GR>A resonant dipole antenna (yes, in the mythical Free Space) has an impedance
GR>of 70-odd ohms. If you hook it directly to a 50 ohm coax you will see a
GR>1.5:1 SWR. You can trim the antenna to make it look like 50 ohms, but now
GR>it's not resonant any more, and isn't 50 ohms *resistive*; there's a
GR>reactance component to it. Also, a non-resonant antenna isn't as "good"
GR>as a resonant one. ^^
^^^^^^^^^^^^^^^^^^

Who says? In what way is it not as good?

GR>So, what are the alternatives? One idea is to use 70-odd ohm coax (TV Stuff
GR>at the antenna end. Perfect match. The problem is how to hook that coax to
GR>your 50 ohm tranceiver. If you just hook it up, you'll have that 1.5 : 1
GR>SWR again.

Not so! SWR is determined by the feedpoint impedance of the antenna and
the characteristic impedance of the line, not the impedance of the rig.

If your dipole really has a feedpoint impedance of 75 ohms (don't bet on
that) and is fed with 75-ohm line, Your SWR will be 1:1 and the rig will
see a 75-ohm load. I suspect your rig would not mind this at all and
would deliver full power.

GR>So, all you Dipole Experts, what is the right answer? Yes, this is somewhat
GR>accedemic, since you never really have a mythical Free Space antenna, but
GR>at least you will be starting from a technically sound design.

There really is no "right" answer. You can estimate the actual
radiation resistance of your dipole based on its height above ground in
wavelengths. This information is in most antenna handbooks. It will
undoubtedly be somewhere between 40 to 90 ohms at most reasonable
heights.

The question then becomes: What feedline will give you the lowest loss
while allowing the transmitter to put out full power. The lowest loss
line may not necessarily be the one that gives the lowest SWR. Also, if
the line is not perfectly matched to the antenna, the load that the
transmitter sees will vary with the length of the line, ALTHOUGH THE SWR
WILL NOT VARY.

Since virtually all rf wattmeters and directional couplers are 50 ohm
devices, I would probably go with a low loss 50 ohm line. I would trim
the dipole for minimum SWR. If the rig didn't like the impedance it was
seeing, as evidenced by reduced output, I would adjust the line length
until the rig was putting out full power.

Remember, no matter how perfectly you match the line to the antenna, it will only be matched at one frequency. Tune up or down the band a bit and you will be mismatched. At my station, I accept the fact that I'm going to be mismatched most of the time. So I use ladder line and a tuner. I get low loss and my rig always sees a nice 50 ohm load. ;-)

73 de Art N2AH

2454. Current FT-470 Mods List???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-27 22:37:01 UTC
From: guru314708@aol.com
Message-ID: <33of6d$fan@search01.news.aol.com>
Source record: 116490

I would greatly appreciate a list of current mods for the Yaesu FT-470.
I have one now but it is original vintage. Send reply or list via Email
--tnx.

2455. FM transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 02:26:00 UTC
From: lou.brown@ase.com
Message-ID: <5a.749.952.0N1CC3BB@ase.com>
Source record: 116494

A >Message-ID: <33gnl0$lvd@solaris.cc.vt.edu>
A >Newsgroup: rec.radio.amateur.homebrew
A >Organization: Virginia Tech, Blacksburg, Virginia

A > I was looking for the schematics on how to build a FM transmitter,
A >maybe even a transceiver later on down the road. I have the schematics
A >one that was e-mailed to be, but it never worked. I would like it to b
A >simple
A >if possible. Any help would be appreciated.
*
A >* Art

Get the Motorola Communication Devices databook. The have some AM/FM
transmitter ICs that are good up to 1 GHz @ 10 mw. Even better, since you
are at a university, call the Motorola's university support office and get
some free samples. I'm not sure what the number is, but my freind had seven
of these chips sent to him when he was at school last year.
Good luck,
Lou

brown@ardneh.rsl.ukans.edu

---
* WaveRdr 1.10 [NR] * UNREGISTERED EVALUATION COPY

2456. Re: HP8052-3081 PIN diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 06:14:02 UTC
From: studebaker@aol.com
Message-ID: <33p9va$lat@search01.news.aol.com>
Source record: 116496

In article <1994Jun15.124148.8146@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP)) writes:

I'll send you samples of the Microsemi alternate part. E-mail me.

2457. Re: Plessey SL6440 mixer source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 06:20:01 UTC
From: studebaker@aol.com
Message-ID: <33paah$ld0@search01.news.aol.com>
Source record: 116497

In article <Csw0Az.pM@SSD.intel.com>, rlt@ssd.intel.com (Roger Traylor)
writes:

send me an e-mail request. I think this part has been discontinued but if
not i can get you samples.

2458. Re: homebrew GPS radio front end

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 06:23:05 UTC
From: studebaker@aol.com
Message-ID: <33pag9$le4@search01.news.aol.com>
Source record: 116498

In article <1994Aug3.214148.16052@njitgw.njit.edu>, ken@helios.njit.edu (ken ng) writes:

why homebrew? Plessey has a front end chip that TAKES RF IN AND SPIT SIGN AND MAGNITUDE DATA OUT.

2459. TNC-2 Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 11:58:21 UTC
From: rudi@chem.rug.nl
Message-ID: <33pu4t$nr4@rugch4.chem.rug.nl>
Source record: 116499
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

HI all,

I'm desperately looking for the Z-80 SOURCE CODE for the TNC-2, as I want
to build a Z-80 TNC with the new higly-integrated Z-80 KIO-chip which
combines all pheripherals into one chip. I have to modfy the source for the
location (addresses) of the peripherals.

I scanned the internet, but with no succes. The (internet-available) tapr disks
seem only to contain the HEX-images for the firmware not the source. I faxed
the TAPR directly, but got no response.

Maybe some of you know the (internet) location of the source or do have the
source. If so, please share it with me ! thanks !!

rudi
(PE1NFP)

--

Rudi van Drunen Internet: rudi@chem.rug.nl
: rudi@rugrcx.rug.nl
Dept. of Biophysical Chemistry X400 : c=nl;admd=400net;prmd=surf;
University of Groningen o=rug;ou=chem;s=van.drunen;i=R;
The Netherlands Bitnet:

2460. Q:How to build valve amps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 13:22:44 UTC
From: fhlee@csam.MY
Message-ID: <9408280522.AA18235@csam.MY>
Source record: 116495

Hi,

I am interested in building a valve amp myself. Does
anyone knows if there is any docs out there which
will explains how to do it.

Thanks.

-- Lee, Fook Heng
fhlee@csam.my

2461. Books on RDF antennas, gear...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-28 21:44:04 UTC
From: ghopper@eskimo.com
Message-ID: <Cv9LpM.M6D@eskimo.com>
Source record: 116501

I have receintly been bitten by the DF bug and after using borrowed gear
for the last few hunts, would like to build some of my own. I have
looked at several books out there and read some of the articles in 73
magazine but owing to the small DF community here in Snohomish county
(if any of you out there are here, call me (206)316-3126)
I am looking for opinions on kits, books and the like. I'd rather not
buy a complete unit since I enjoy putting together new projects. I don't
really have solid preferences yet so I'm open to anything.
Grant

2462. SSTV--Published Mac/PC-based projects? FSTV frame-->SSTV projects?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 00:26:12 UTC
From: rcamama@dewey.cc.utexas.edu
Message-ID: <33r9v4$9c9@dewey.cc.utexas.edu>
Source record: 116502
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello,
As the header suggests, I'm looking around for a few published SSTV projects.
The ones I seek fall into two groups:

1) Anyone know of SSTV hardware/software projects that are based on
either Mac or PC systems. Info on Mac-based projects preferred, since I can
get to them more often than PCs, but will gladly accepts suggestions on either
systems.

2) Any published projects involving hardware exclusively meant for
conversion of fast-scan video frames into SSTV-format images?

Thanx in advance,
R. Camama

2463. Re: Phase-locked Xtal Oscilla

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 00:44:14 UTC
From: tomb@lsid.hp.com
Message-ID: <Cv9u1r.Epr@hpcvsnz.cv.hp.com>
Source record: 116503

Geoff Kennedy (geoff.kennedy@woodybbs.com) wrote:
: Hi Y'all !!!

: I would like to build a crystal-controlled oscillator which can be
: phase-locked to an input signal. Has anyone done this ??

: The oscillator will operate at either 2.4576 or 4.9152 MHz, and must
: lock onto a 2.4 KHz audio tone (f/1024 or f/2048). Lock-in and tracking
: range must be +/- 2 Hz (relative to Fin). The input signal is often
: buried in noise.

: Once locked, the oscillator should not drift too far if the input
: signal drops below threshold - fast lock-up and slow release.

: Any ideas ??

Gee, color TV receivers do this all the time. They get 8 cycles of color-burst (at least in NTSC) once per horizontal scan line. But they typically don't have anywhere near the lock range you want: something like +/- 2kHz at 2.4MHz. On the other hand, there are lots of crystal oscillator manufacturers that sell VCXOs that can cover this sort of range. A varicap in a parallel-mode oscillator that varies the effective crystal load from a very few pF up to 15 or 20pF likely would do the trick. You might want to try to linearize the freq vs control voltage a little, to keep the pll loop gain reasonably constant. Might be nice if you can detect that the sig is below threshold and not drive the loop filter during those periods with garbage noise from the phase comparitor, though if Fin doesn't drift very quickly, then perhaps you don't really need fast lock-up and a slow loop filter would be appropriate.

2464. FSTV: Modifying a Gemini RABBIT for amateur service?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 00:46:32 UTC
From: rcamama@dewey.cc.utexas.edu
Message-ID: <33rb58$9kr@dewey.cc.utexas.edu>
Source record: 116504

Just wondering,
I could swear I heard something over the last two years about
modifying a Gemini RABBIT VCR-to-TV wireless TX-RX system [or at least the
TX part] for amateur FSTV service. Has this been done, or at least, is
it possible? If so, over what bands [I'm not certain what freqs the RABBIT
works on]?

Thanx,
R. Camama

2465. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 01:09:21 UTC
From: ab717@FreeNet.Carleton.CA
Message-ID: <Cv9v7L.4Dr@freenet.carleton.ca>
Source record: 116505

In a previous article, jeroen@dxcern.cern.ch (Jeroen Belleman) says:

>In article <fred-mckenzie-1708941430140001@128.159.123.111>,
>Fred McKenzie <fred-mckenzie@ksc.nasa.gov> wrote:
>>The "super-regenerative" receiver (detector) should also be considered in
>>the discussion. I never understood how they worked,...
>
>These things have always puzzled me too.
>As my current understanding goes, an oscillator tuned to the
>approximate frequency of reception is periodically stopped and then
>allowed to restart at a rate of, say, 40KHz. If some received
>energy at the right frequency is coupled into the resonant
>circuit, the restart tends to be quicker, with a noticable effect
>on the current drawn by the oscillator.
>
>The current drawn by the oscillator contains the output signal.
>
>Is this how it works?
>
>Best regards,
>Jeroen Belleman
>
Build an amplifier with a gain of mu. build a network (attenuator)
to connect the o/p to the i/p with a gain (loss) of beta. The amplifier
multiplies the signal mu times and the output is fed back to modify the
input beta times the output. The output is input*mu*beta. If beta is
negative (out of phase) then the bandwidth is extended, the noise is
increased, the distortion is decreased. (audio). If beta is positive the
bandwidth is decreased, the noise is decreased, and the distortion is
increased (rf). I highly recommend 'high Fidelity curcuit design'by Norman H.
Crowhurst and George Fletcher Cooper, Copyright Gernsback Library, Inc. 1956.

--
He who laughs last lives longer.
Bert Bicknell

2466. Re: Phase-locked Xtal Oscilla

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 01:54:10 UTC
From: robinsonhb@aol.com
Message-ID: <33rf42$89b@search01.news.aol.com>
Source record: 116506

In article <93.1893.7584.0NFB2E9B@woodybbs.com>,
geoff.kennedy@woodybbs.com (Geoff Kennedy) writes:

If the signal is buried in noise, it may not be possible to lock onto it
all the time. There are PLL chips available that will work at the
frequencies you mentioned, but the +/- 2 Hz may be a problem, especially
with a weak signal. If you have to lock on to signals very near the noise
level, some addtional analog or digital signal processing may be required.
E-mail me if you want more info to RobinsonHB@aol.com.

2467. Collins Tubesters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 04:36:06 UTC
From: tjenkins@pnet16.navy.mil
Message-ID: <CvA4s6.2t3@nctams1.uucp>
Source record: 116507

Anyone have a line on these little guys? I'm looking for a set for 32/75 S-Line.

--Tom

INET: tjenkins@pnet16.navy.mil

2468. 10M - 20M TRANSVERTER?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 13:51:51 UTC
From: rar3h@uvacs.cs.Virginia.EDU
Message-ID: <CvAuIF.8JC@murdoch.acc.Virginia.EDU>
Source record: 116509

```
--
------------------------------------------------------------------------
Robert A. Ross University Of Virginia
Research Scientist Center for Semicustom Integrated Systems
rar3h@virginia.edu INTERNET Systems Integration Laboratory
804-982-2227 VOICE
804-982-2214 FAX "Implementation is far from but a detail"
------------------------------------------------------------------------

Since 10 Meters is quite dead lately, I'd like to build a 10m to/from
20m transverter to use with my RS HTX-100 10 m rig.
Does anyone know where plans for such a thing could be obtained?
Has anyone done this before?

Thanks
WA2MFI
BOB
rar3h@virginia.edu
```

2469. Re: Books on RDF antennas, gear...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 14:39:00 UTC
From: md_hill@pavo.concordia.ca
Message-ID: <29AUG199409394660@pavo.concordia.ca>
Source record: 116508

In article <Cv9LpM.M6D@eskimo.com>, ghopper@eskimo.com (Grant Hopper) writes...
>I have receintly been bitten by the DF bug and after using borrowed gear
>for the last few hunts, would like to build some of my own. I have
>looked at several books out there and read some of the articles in 73
>magazine but owing to the small DF community here in Snohomish county
>(if any of you out there are here, call me (206)316-3126)
>I am looking for opinions on kits, books and the like. I'd rather not
>buy a complete unit since I enjoy putting together new projects. I don't
>really have solid preferences yet so I'm open to anything.
>Grant

By far the most useful reference I have found is the Transmitter Hunting:
Radio Direction Finding Simplified by Moell and Curlee ISBN 0-8306-2701-4.
The publisher is TAB Books. Written by two experienced and avid hunters, it
covers all you could want to know while being very readable. LOTS of U-build
projects, schematics, ideas etc. Costs U.S. $19.95 (I paid aout $27 CDN) worth
every penny.

73 de VE2HVW

2470. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 15:22:34 UTC
From: dnewkirk@arrl.org
Message-ID: <1994Aug29.152234.29324@arrl.org>
Source record: 116511
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Michael Silva (mjsilva@ted.win.net) wrote:

: By chance, I had access to some old QST's a while back and happened to
: come upon issues dating to the "dawn" of the superregen, so maybe I can
: add a little background. The concept, invented by Armstrong, was
: introduced to the world in 1922, and it was immediately heralded as the
: receiver of the future, rendering current technology (regeneration)
: obsolete. Most of the original circuits actually used a separate
: oscillator to provide the switching signal to the received-frequency
: oscillator (terminology my own!). Within a few months, the euphoria
: was wearing off, and QST was publishing articles asking "how come our
: superregens aren't any better?" Within a year they seem to have faded
: from amateur view, although they did resurface with the move into 10,
: 5 and 2.5 meters in the late '20s / early '30s.

[*Empire of the Air* cite deleted]

The "switching" oscillator provides the *quenching* frequency. We have a quench oscillator breadboard attributed to Armstrong in the ARRL Museum.

The main basic "can't do" with the superregen is that it can do heterodyne reception. That lets out CW and SSB demodulation--the reason (well, CW at least :-)) it didn't last in the pre-VHF era. Its broad selectivity also makes it largely useless for narrowband FM, so a superregen is pretty much only an AM and wideband-FM detector.

It's good to see that relatively little traffic on this topic has dwelt long on the issue of how much a regen or a superregen radiates. (Any text that says something like "Don't use those detectors; they radiate" is another case of the specific case, or implementation, being taken as the general case. An RF-amplifierless "direct-conversion" receiver, and likewise an RF-amplifierless superhet with a poorly balanced mixer and insufficient input selectivity, will also radiate, sometimes quite strongly.) A reasonably unliteral RF amplifier stage, along with proper shielding, can take care of detector or mixer radiation in any of these cases. Input filtering (in superhets) also helps.

Data point: The 40-meter regen I published in Sep 1992 *QST* radiates--at a level of roughly 12 picowatts into a 50-ohm antenna load.

Regards,

David Newkirk, WJ1Z
Senior Assistant Technical Editor, *QST*

2471. Re: FSTV: Modifying a Gemini RABBIT for amateur service?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 15:36:54 UTC
From: btoback@netcom.com
Message-ID: <btobackCvAzDI.J62@netcom.com>
Source record: 116510

In article <33rb58$9kr@dewey.cc.utexas.edu> rcamama@dewey.cc.utexas.edu (Robert Camama) writes:
>
>Just wondering,
> I could swear I heard something over the last two years about
>modifying a Gemini RABBIT VCR-to-TV wireless TX-RX system [or at least the
>TX part] for amateur FSTV service. Has this been done, or at least, is
>it possible? If so, over what bands [I'm not certain what freqs the RABBIT
>works on]?

The RABBIT works at around 900 MHz and can easily be modified for use on the 33cm ham band. There was an article in the November or October 1993 73 magazine that described the modification and a small power amplifier.

-- Bruce KN6MN

2472. Re: 6m amplifier using vacuum tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 17:00:54 UTC
From: hbrown@nadir.resd
Message-ID: <1994Aug29.170054.20482@knight.vf.ge.com>
Source record: 116512

My experience with push pull amplifiers is somewhat limited. My main experience is with the "Plumbers Delight" 2 meter amplifiers that came out in the 60's. Yes they work but it's not easy to get them running and staying running with heat and component drift. The best thing ythat ever happened to 2 tube 4CX250 amplifiers was the paralled designs origionated by Dick, K2RIW, for 432 and later by Fred Murray for 6 thru 220 MHz. They work and are much less touchy to tuneup and keep working. My attention span i
s much too short these days for push-pull amps.

73,
Harry, W3IIT

2473. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 20:15:35 UTC
From: bdewitt@csn.org
Message-ID: <CvBCA0.FBy@csn.org>
Source record: 116513
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Dave Newkirk (WJ1Z) (dnewkirk@arrl.org) wrote:
: Michael Silva (mjsilva@ted.win.net) wrote:

: : By chance, I had access to some old QST's a while back and happened to
: : come upon issues dating to the "dawn" of the superregen, so maybe I can
: : add a little background. The concept, invented by Armstrong, was
: : introduced to the world in 1922, and it was immediately heralded as the
: : receiver of the future, rendering current technology (regeneration)
: : obsolete. Most of the original circuits actually used a separate
: : oscillator to provide the switching signal to the received-frequency
: : oscillator (terminology my own!). Within a few months, the euphoria
: : was wearing off, and QST was publishing articles asking "how come our
: : superregens aren't any better?" Within a year they seem to have faded
: : from amateur view, although they did resurface with the move into 10,
: : 5 and 2.5 meters in the late '20s / early '30s.

: [*Empire of the Air* cite deleted]

: The "switching" oscillator provides the *quenching* frequency. We have a
: quench oscillator breadboard attributed to Armstrong in the ARRL Museum.

: The main basic "can't do" with the superregen is that it can do heterodyne
: reception. That lets out CW and SSB demodulation--the reason (well, CW at
: least :-)) it didn't last in the pre-VHF era. Its broad selectivity also
: makes it largely useless for narrowband FM, so a superregen is pretty much
: only an AM and wideband-FM detector.

: It's good to see that relatively little traffic on this topic has dwelt long
: on the issue of how much a regen or a superregen radiates. (Any text that
: says something like "Don't use those detectors; they radiate" is another
: case of the specific case, or implementation, being taken as the general
: case. An RF-amplifierless "direct-conversion" receiver, and likewise an
: RF-amplifierless superhet with a poorly balanced mixer and insufficient
: input selectivity, will also radiate, sometimes quite strongly.) A
: reasonably unliteral RF amplifier stage, along with proper shielding, can
: take care of detector or mixer radiation in any of these cases. Input
: filtering (in superhets) also helps.

: Data point: The 40-meter regen I published in Sep 1992 *QST* radiates--at a
: level of roughly 12 picowatts into a 50-ohm antenna load.

: Regards,

: David Newkirk, WJ1Z
: Senior Assistant Technical Editor, *QST*

In general, regens DO radiate! The FCC requires that they be CERTIFIED with the FCC before commercial sale, while super-hets only require notification. None of this means a thing as an experimenter building one item for his/her use, but it does imply that history has shown regens to be pretty good transmitters......

--
Brent G DeWitt (bdewitt@tuvps.com)
TUV Product Service
Boulder, CO USA
phone (303) 449-4165 fax (303) 449-3004

2474. Problem with Uniden 2830

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 20:21:11 UTC
From: lakki@krksun.krk.fi
Message-ID: <1994Aug29.202111.9810@krk.fi>
Source record: 116516

I have a feedback problem with my Uniden 2830, at AM and SSB positions when transmitting, my audio is fed back to loudspeaker, and that is discusting!

Have anyone done anything with similar problem?

Please e-mail!

/Erik OH2LAK

--
E R I K F I N S K A S OH2LAK
----------------------------------- TELE: Jo puoli miljoonaa
InterNet: Lakki@krk.fi vihaista NMT-GSM soittelijaa
Lakki@muncca.fi Radiolinja on paljon huonompi
Amateur Packet: OH2LAK@OH2RBJ.FIN.EU kuin me.

Puh.k.90-803 8404 a.940-500 6800 RL: Tele on paljon meit{ huonompi.
t.90-693 1107 a.950-555 0551 Me ollaan ehdottomasti parempi.

2475. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 20:33:16 UTC
From: battin@cyclops.iucf.indiana.edu
Message-ID: <CvBD3H.2MM@usenet.ucs.indiana.edu>
Source record: 116514

In article <93.1891.7584.0NFB2E97@woodybbs.com>, Art Harris (art.harris@woodybbs.com) wrote:

[snip...]

> The question then becomes: What feedline will give you the lowest loss
> while allowing the transmitter to put out full power. The lowest loss
> line may not necessarily be the one that gives the lowest SWR. Also, if
> the line is not perfectly matched to the antenna, the load that the
> transmitter sees will vary with the length of the line, ALTHOUGH THE SWR
> WILL NOT VARY.

> Since virtually all rf wattmeters and directional couplers are 50 ohm
> devices, I would probably go with a low loss 50 ohm line. I would trim
> the dipole for minimum SWR. If the rig didn't like the impedance it was
> seeing, as evidenced by reduced output, I would adjust the line length
> until the rig was putting out full power.

Just wanted to say, thanks, Art, for the clear exposition of this.
This explains what I've seen when trying to set up a 40 M dipole, and
makes the fix clear! (I couldn't understand why I saw less output as
trimming brought the SWR down.) Now I know what was happening and,
more importantly, what to do about it.

--
Gene Battin, N9XAM
battin@iucf.indiana.edu

2476. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 20:42:01 UTC
From: mack@ncifcrf.gov
Message-ID: <CvBDI2.Lp2@ncifcrf.gov>
Source record: 116422

In article <btobackCuyHH5.Hw4@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>
>I hope that one of these will be the correct newsgroup for this
>question; advice on redirection is welcome.
>
>I'm thinking of assembling a portable EME station that I could use
>for demonstrations at schools. I don't know if such a thing is
>possible at any reasonable cost, or for any reasonable definition
>of "portable." But here are the questions anyway:
>
>1. I assume that because of my Arizona location, I can't use
> 432MHz. This seemed to be the best compromise between power
> amplifier practicality and antenna size. Is 23cm a good
> second choice?

I've just started on EME. I picked 2m because there's more gear
available, and there are more people on 2m EME than other bands.
There are technical reasons (cooler sky) why 432 etc are better,
but if you want to get on easily, 2m can't be beat.

>
>The objective is a station that can hear its own echoes -- not
>necessarily with communication-capable quality -- and can
>communicate with a "big gun" EME station.

A station that can hear its own echoes is a big gun station to me.
I think there are a lot more people who can't hear their own echoes than
those that can.

Joe Mack NA3T
mack@ncifcrf.gov
(Nat Inst Health)

>
>Thanks,
>-- Bruce Toback
>KN6MN

2477. Looking for 2SK73GR or 2SK77GR

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-29 21:13:40 UTC
From: hpaik@silver.sdsmt.edu
Message-ID: <hpaik.89.2E624F83@silver.sdsmt.edu>
Source record: 116515

I am looking for 2SK73GR for TS830.
I called first Kenwood and give her 2SK73GR.
They did not know what it was, so I give her the part number.
She said it is replaced by 2SK77GR.
It is only 2 dollar something plus 6 dollar something for shipping and handling, moreover she told me that minimum order is $10.
So I called the RCA part store here (replacement FET SK????), but they were out of stock. Is there any other store to get the dual gate FET (2SK73GR or 2SK77GR) by mail ?
e-mail to hpaik@silver.sdsmt.edu
H. Paik

2478. Re: FFTMORSE (was: DSP on a SoundBlaster)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 13:06:12 UTC
From: dbraun@ilx049.iil.intel.com
Message-ID: <33vas4INN11j4@ilx018.iil.intel.com>
Source record: 116517

In article <777704714snx@djwhome.demon.co.uk>, david@djwhome.demon.co.uk (David Woolley) writes:

|> Unfortunately this is nothing like what was being asked for, which is
|> analogue input and output with digital filtering, which you can't do on
|> any of the 8 bit SBs in real time.

I am planning to try to prove this wrong. The CPU horsepower is not a problem. Of course, you need a fairly fast CPU (e.g. 486). Also, the PC won't be able to do anything else at the same time...

Doug Braun (4X/N1OWU)

Email: dbraun@inside.intel.com
Intel Mail: IDC1-41
iNet: 8-435-5069 Long Distance: 011-972-4-655069
Fax: 8-435-5999 Long Distance: 011-972-4-655999
Snail Mail: US: Other:
PO Box 311 Intel Israel, Ltd.
Mendham, NJ 07945 IDC-42
Matam Scientific Center
Haifa, Israel 31015

From a CD-ROM advertisement:

"This Disc contains Hacking, Phreaking, Tone Box Information, Anarchy, Subculture, Magic, Internet & Computer Security Secrets, Bomb Plans, FBI & Police Net Files, Virus Code, Sick & Twisted Graphics, UFO, Occult, even HAM RADIO Files, plus much, much more!"
^^^ ^^^^^

2479. More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 14:10:17 UTC
From: mack@mails.imed.COM
Message-ID: <9407307782.AA778263641@mails.imed.com>
Source record: 116418

David Newkirk's post in digest #258 prompted this post. I have first hand experience with the receiver radiation problem he described. I work in an all metal building which thankfully does have windows. I have an antenna for FM broadcast near one office with a window. My favorite station is 102.9 but several others' favorite station is 92.1 including the person whose office is below my antenna. Add 10.7 to 92.1 and you get 102.8 which completely wipes out my station. I looked at it with the spectrum analyser and the LO from the guy's boom box is 5 db stronger than the signal I am trying to receive.

This should make it obvious why they do not want you to use a portable FM radio in an aircraft where the LO can easily be in the aircraft band.

My experience with cheap boom box type radios and small portable radios has been consistent. They make incredibly good transmitters!

Ray
WD5IFS
mack@mails.imed.com

2480. Re: FFTMORSE (was: DSP on a SoundBlaster)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 15:37:30 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <33vjnq$6i7@chnews.intel.com>
Source record: 116419

In article <33vas4INN11j4@ilx018.iil.intel.com>,
Braun Doug <dbraun@iil.intel.com> wrote:
>In article <777704714snx@djwhome.demon.co.uk>, david@djwhome.demon.co.uk (David Woolley)
writes:
>
>|> Unfortunately this is nothing like what was being asked for, which is
>|> analogue input and output with digital filtering, which you can't do on
>|> any of the 8 bit SBs in real time.
>
>I am planning to try to prove this wrong. The CPU horsepower is not a
>problem. Of course, you need a fairly fast CPU (e.g. 486). Also,
>the PC won't be able to do anything else at the same time...
>Doug Braun (4X/N1OWU)

Hi Doug, I don't think David means the PC can't do the filtering. I have
been down the same road and found that an 8-bit A/D needs AGC on the
front end where a 16-bit A/D does not. Saturation is a huge problem in
8-bit systems and the dynamic scaling required eats up a lot of CPU
power. Low dynamic range often leaves one with almost no low-level signal
left to filter. It can be done with 8-bits but the complexity is IMO, not
worth it. A 16-bit A/D gives one a lot of "headroom" and has saved my
sanity. A 2-pole sigma filter gets rid of a lot of noise, too.

73, Cecil, KG7BK, OOTC (Not speaking for Intel)

--
Intel, Corp.
5000 W. Chandler Blvd.
Chandler, AZ 85226

2481. wanted c source for icom's serial interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 16:23:46 UTC
From: minerds@dstos3.dsto.gov.au
Message-ID: <minerds.5.000A0CAD@dstos3.dsto.gov.au>
Source record: 116429

looking for software soure routines written in C to control icom ic-707 hf transceiver via it's serial interface

2482. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 18:21:11 UTC
From: tlemense@rchp33.eld.ford.com
Message-ID: <33vtan$b0v@eccdb1.pms.ford.com>
Source record: 116420
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Brent G. DeWitt (bdewitt@csn.org) wrote:
: Dave Newkirk (WJ1Z) (dnewkirk@arrl.org) wrote:

: : It's good to see that relatively little traffic on this topic has dwelt long
: : on the issue of how much a regen or a superregen radiates. (Any text that
: : says something like "Don't use those detectors; they radiate" is another
: : case of the specific case, or implementation, being taken as the general

Hear Hear! I cannot agree more. Sure, there are lots of examples of crude
superregens that radiate like banshees, but they are just that--crude
receivers. Superregens are superior to 'hets in terms of sensitivity vs.
cost and simplicity, IMHO. Same sort of baseless statements as: MOSFET's
are better than bipolar transistors, RISC is better than CISC, and Coke is
better than Pepsi. Of course, the last is a TRUE statement, but I digress..:-)

: : case. An RF-amplifierless "direct-conversion" receiver, and likewise an
: : RF-amplifierless superhet with a poorly balanced mixer and insufficient
: : input selectivity, will also radiate, sometimes quite strongly.) A
: : reasonably unliteral RF amplifier stage, along with proper shielding, can
: : take care of detector or mixer radiation in any of these cases. Input
: : filtering (in superhets) also helps.

Very good points indeed. Having direct experience with designing both
types of receivers, I completely agree. A superregenerative transistor
oscillator usually runs with about 200 uA of collector current, while the
LO in most wireless-type superhet designs consumes at least a couple mA.
When both circuits are preceeded by a well designed amplifier with a
decent amount of reverse isolation, say 40 dB or so, the radiated emissions
will meet US FCC, Canadian DOC, and the various european regs.

: : Data point: The 40-meter regen I published in Sep 1992 *QST* radiates--at a
: : level of roughly 12 picowatts into a 50-ohm antenna load.

Another data point, the 315 MHz superregenerative recevier inside the upcoming
Explorer's Remote Keyless Entry system is about 3-4 dB off the noise floor
at 3 meters. I would consider both my design and David's to be "state of
the art" in terms of superregen receivers.

: In general, regens DO radiate! The FCC requires that they be CERTIFIED
: with the FCC before commercial sale, while super-hets only require
: notification. None of this means a thing as an experimenter building one

I don't consider that the FCC only requires notification for 'hets to mean
that they are superior from a re-radiation standpoint! Remember, the FCC
had to mold and shape the broadcast world that we now live in, and their
plan was to make the receivers cheap, simple, and easy to market. The

rule for Notification for the superhet's simply makes it easy to market, and takes them off of the hook of having to tightly regulate all the mfgr's of broadcast sets. The economics and business reasons for this rule are, IMHO, more significant than any technical reasons.

: item for his/her use, but it does imply that history has shown regens to
: be pretty good transmitters......

Seeing that history has spent much more effort improving the superhet, as it supports both FM and AM broadcast, that is not that hard to believe. I have a very thorough collection of superregen articles and papers, and they fill about 6" of file cabinet space. I wouldn't even attempt to collect all the papers and patents re: superhets.

The reason for the regen's bad rap is that in thermionic times (that's toobs to you and me) an RF stage was an extra capacitor gang, an extra tube, and more W of filament power--real product cost/benefit considerations. Now, mass-produced superregens are relegated to wireless control receviers, a job which they do very well, but ultra cost sensitive -- an RF stage adds components, board space, current draw, etc. -- again, real cost/benefit tradeoffs. As wireless products become more complex, you will see them move away from superregens to other topologies that support more complex & compact modulation methods, but only when costs allow and functionality demands it.

But of course, I am biased as I design superregens for a living... I would be happy to correspond with anyone wanting to discuss the merits and pitfalls of this simple, sensitive, and cost effective receiver...

--
Tom LeMense
RF Product Design Engineer
Ford Motor Co - Electronics Division
tlemense@rchp33.eld.ford.com
'82 XV750 Virago DoD #1074

2483. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 18:50:00 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CvD2zE.CFx@srgenprp.sr.hp.com>
Source record: 116421
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Brent G. DeWitt (bdewitt@csn.org) wrote:
: Dave Newkirk (WJ1Z) (dnewkirk@arrl.org) wrote:

: : It's good to see that relatively little traffic on this topic has dwelt long
: : on the issue of how much a regen or a superregen radiates. (Any text that
: : says something like "Don't use those detectors; they radiate" is another
: : case of the specific case, or implementation, being taken as the general
: : case. An RF-amplifierless "direct-conversion" receiver, and likewise an
: : RF-amplifierless superhet with a poorly balanced mixer and insufficient
: : input selectivity, will also radiate, sometimes quite strongly.) A
: : reasonably unliteral RF amplifier stage, along with proper shielding, can
: : take care of detector or mixer radiation in any of these cases. Input
: : filtering (in superhets) also helps.

: : Data point: The 40-meter regen I published in Sep 1992 *QST* radiates--at a
: : level of roughly 12 picowatts into a 50-ohm antenna load.

: In general, regens DO radiate! The FCC requires that they be CERTIFIED
: with the FCC before commercial sale, while super-hets only require
: notification. None of this means a thing as an experimenter building one
: item for his/her use, but it does imply that history has shown regens to
: be pretty good transmitters......

People generally use regenerative detectors to reduce circuit complexity,
which implies that the rest of the circuit should be simple too. For that
reason, most regen's lack an RF amplifier in front of the detector, so they
radiate like crazy.

However, as Dave mentions, it is quite possible to eliminate the problem
by including an RF amplifier with good reverse isolation. Another way
is to use the regenerative detector at an IF frequency, as part of a
superhet receiver: Most mixers have enough isolation to eliminate any
radiation problem.

AL N1AL

2484. Re: FSTV: Modifying a Gemini RABBIT for amateur service?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 19:39:17 UTC
From: chrise@comtrol.com
Message-ID: <CvD59I.L2n@comtrol.com>
Source record: 116423

In article <btobackCvAzDI.J62@netcom.com>,
Bruce Toback <btoback@netcom.com> wrote:
>In article <33rb58$9kr@dewey.cc.utexas.edu> rcamama@dewey.cc.utexas.edu (Robert Camama)
writes:
>>
>>Just wondering,
>> I could swear I heard something over the last two years about
>>modifying a Gemini RABBIT VCR-to-TV wireless TX-RX system [or at least the
>>TX part] for amateur FSTV service. Has this been done, or at least, is
>>it possible? If so, over what bands [I'm not certain what freqs the RABBIT
>>works on]?
>
>The RABBIT works at around 900 MHz and can easily be modified for use on
>the 33cm ham band. There was an article in the November or October 1993
>73 magazine that described the modification and a small power amplifier.
>

Do these Rabbit transmitters use any sort of chip (like, MC1317x perhaps)
as the exciter... or are they all discrete ? I'm curious if they would
be mod'able for FM modulation and perhaps highspeed FSK.

Chris
--
Chris Elmquist, N0JCF voice: (612)631-7614
chrise@comtrol.com fax: (612)631-8117

2485. Help for Equivalent Heath SB104A Part

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 19:44:10 UTC
From: NURS036@uabdpo.dpo.uab.edu
Message-ID: <17022CF3AS86.NURS036@uabdpo.dpo.uab.edu>
Source record: 116424

After 4 years in storage after a move, I dug out my old Heath SB104A to set up in my new house.

Unfortunately, some bandswitch contacts are only intermittant, and no amount of cleaning has rectified the problem.

Does anyone know of an available equivalent for the following (I only have the Heath part # available...):

S1A & B: Heath # 63-721: 2-Wafer Rotary Switch
S1C & D: Heath # 63-723: Rotary Switch

Any hints on a suitable replacement & where to order them would be appreciated!

73,

Michael

- -
Michael T. Weaver, RN Ph.D.
U. of Alabama at Birmingham Internet: nurs036@uabdpo.dpo.uab.edu
School of Nursing Bitnet : nurs036@uabdpo
UAB Station Radio : kg8h (qrp arci # 8576)
Birmingham, AL 35294-1210 Phone : (205) 934-6913
- -

2486. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 21:09:03 UTC
From: rflukes@silver.cs.umanitoba.ca
Message-ID: <34075f$6sl@canopus.cc.umanitoba.ca>
Source record: 116426

In article <CvBDI2.Lp2@ncifcrf.gov> you write:
>In article <btobackCuyHH5.Hw4@netcom.com> btoback@netcom.com (Bruce Toback) writes:
>>
>>I hope that one of these will be the correct newsgroup for this
>>question; advice on redirection is welcome.
>>
>>I'm thinking of assembling a portable EME station that I could use
>>for demonstrations at schools. I don't know if such a thing is
>>possible at any reasonable cost, or for any reasonable definition
>>of "portable." But here are the questions anyway:
>>
>>1. I assume that because of my Arizona location, I can't use
>> 432MHz. This seemed to be the best compromise between power
>> amplifier practicality and antenna size. Is 23cm a good
>> second choice?
>
>I've just started on EME. I picked 2m because there's more gear
>available, and there are more people on 2m EME than other bands.
>There are technical reasons (cooler sky) why 432 etc are better,
>but if you want to get on easily, 2m can't be beat.

I would also like to know what frequency is the best choice for EME.
Aside from the obvious practicality of generating big power (1KW)
at frequencies about 432MHz, there must be some other factors
such as reflectivity of signals from the moon, and absorption of
signals by the atmosphere.

What about 900, 1296, and 2304MHz? What are some of the advantages
of these over say 2m? Obviously, a high gain antenna is much smaller.

Any info would be greatly appreciated.
Thanks,
--Rich
--
Richard F. Lukes rflukes@silver.cs.UManitoba.CA
Computer Science Department
University of Manitoba HOME: (204)-257-6701
Winnipeg, Manitoba CANADA WORK: (204)-474-8696

2487. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-30 22:17:28 UTC
From: rossi@VFL.Paramax.COM
Message-ID: <1994Aug30.221728.22347@VFL.Paramax.COM>
Source record: 116425
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <33vtan$b0v@eccdb1.pms.ford.com> tlemense@rchp33.eld.ford.com (T J LeMense (Tom)) writes:
>Brent G. DeWitt (bdewitt@csn.org) wrote:
>: Dave Newkirk (WJ1Z) (dnewkirk@arrl.org) wrote:
>
>: In general, regens DO radiate! The FCC requires that they be CERTIFIED
>: with the FCC before commercial sale, while super-hets only require
>: notification. None of this means a thing as an experimenter building one
>
>I don't consider that the FCC only requires notification for 'hets to mean
>that they are superior from a re-radiation standpoint! Remember, the FCC
>had to mold and shape the broadcast world that we now live in, and their
>plan was to make the receivers cheap, simple, and easy to market. The
>rule for Notification for the superhet's simply makes it easy to market,
>and takes them off of the hook of having to tightly regulate all the mfgr's
>of broadcast sets. The economics and business reasons for this rule are,
>IMHO, more significant than any technical reasons.
>
>: item for his/her use, but it does imply that history has shown regens to
>: be pretty good transmitters......

Superhets radiate too!! I discovered recently while trying to listen to
a repeater on 444.0 MHz I kept hearing various carriers and noises come
and go as I drove around. They sounded very "local" since often they were
full quieting but they would have lots of very deep fades then disappear a
half mile down the road... then come back... then disappear.

Turns out what I was hearing was the local oscillators in other car radios
tuned to a popular local FM station on 100.3 MHz

100.3 + 10.7 = 111.0 MHz LO frequency x 4th harmonic = 444.0 MHz

With some car radios (mine) you can even hear some modulation from the
FM station way way way down in the noise.

If you have 440 mobile, pick the 440 frequency that matches a local FM
station and see how many car radios you can hear while you are driving
around ;-) You will be amazed! Some of those suckers really put out
some signal!

FM STATION LO LO 4th harmonic
99.50 110.20 440.80
99.70 110.40 441.60
99.90 110.60 442.40
100.10 110.80 443.20

```
100.30 111.00 444.00
100.50 111.20 444.80
100.70 111.40 445.60
100.90 111.60 446.40
101.10 111.80 447.20
101.30 112.00 448.00
101.50 112.20 448.80
101.70 112.40 449.60

================================================================
```

Pete Rossi - WA3NNA rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania

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================================================================
```

2488. Re: 440Mhz 50 ohm - 70 ohm transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 01:05:42 UTC
From: Peter Richeson <richesonp@delphi.com>
Message-ID: <xEwROqe.richesonp@delphi.com>
Source record: 116427

There is a company ZD Engineering that makes 50 to 75 ohm transformers. I have used them on 2m and 440Mhz and they work great. I dont have the address handy. If any one wants it drop me a line and I will post it.

Peter/KA5COI

2489. Re: FFTMORSE (was: DSP on a SoundBlaster)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 01:14:46 UTC
From: sct@po.cwru.edu
Message-ID: <340li7$pr9@usenet.INS.CWRU.Edu>
Source record: 116428

In article <33vas4INN11j4@ilx018.iil.intel.com>,
Braun Doug <dbraun@ilx049.iil.intel.com> wrote:
> I am planning to try to prove this wrong. The CPU horsepower is not a
> problem.

I believe the original problem with using a SoundBlaster is that it
cannot do A/D and D/A simultaneously, or so it is alleged. If you
build or buy a card that can do simultaneous input and output, the
problem is reduced to software. Until then, it stays a hardware
problem. (If you have some way of working around the limitation in
software, please publish it somewhere so everyone else who wants to
try real-time audio on a SoundBlaster can give it a try.)

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2490. 2M Amp ('73

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 04:21:44 UTC
From: Felix Ng <fng@yvr.cyberstore.ca>
Message-ID: <BK.BW.778306904.1103527590.fng@yvr.cyberstore.ca>
Source record: 116431
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I'm building the 2m amp project in '73 magazine (Nov '93). The article seems pretty straight forward. I have one question though. For the trimmers, they use ARCO 423's and an ARCO 404. Nowhere in the article does it say what the adjustable capacitance range for the two trimmers are. Does anyone know so I can find an equivalent? Thanks!

Felix
--
Felix Ng - Vancouver, British Columbia, Canada
fng@cyberstore.ca / Fax: 604-322-5936 / VE7YDG / D.G.I.F. #8767

2491. addr request

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 05:54:37 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <3415ut$7p5@olivea.ATC.Olivetti.Com>
Source record: 116430
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Does anybody know if this company is still in buisness ?
Did it change the addr ?
Do they have an email address (I think inpossible this one !)

SCIENTIFIC RADIO SYSTEM INC.
367 Orchard Street
Rocherster, New York

I have an HF tranceiver from them and I am looking for
the optional ceramic filter for AM receiving.
The RTX is called SR210.

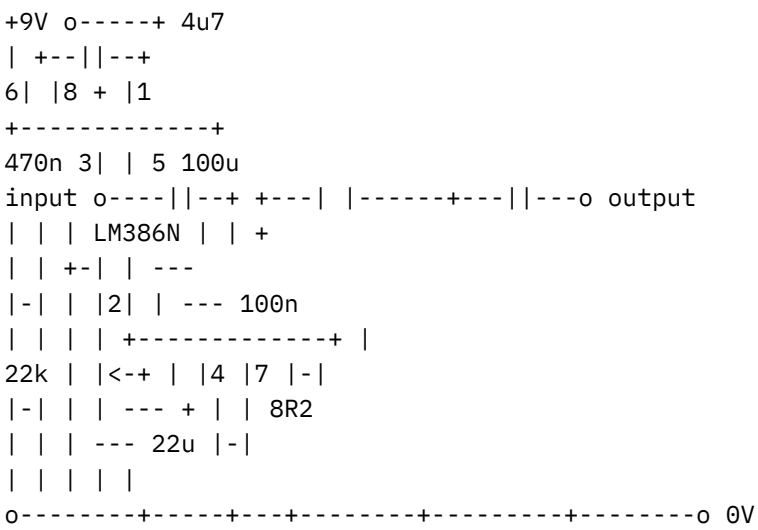
Thank everybody

Roberto VALFREDINI
robertov@atc.olivetti.com (CUPERTINO CA)
robertov@ico.olivetti.com (IVREA ITALY)

2492. Troubleshooting an audio amp - what next ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 10:19:39 UTC
From: dmb@abacus.demon.co.uk
Message-ID: <CvEA0r.1KL@abacus.demon.co.uk>
Source record: 116432

I've put a little amp together to drive a loudspeaker for a homebrew rx, and seem to have a problem. The amp is based around a LM386N chip, with a couple of extra components:



The problems are

1. When I advance the volume control, the amp breaks out into a loud buzz, and locks up until it's powered off again. The point at which this happens is always the same, but depends on the rate that the volume is advanced at. If i whizz thru this point, it remains stable, but breaks out into a buzz when the control is fully advanced. This is the case whether there is input to the amp or not.

2. If I connect an antenna to the central point of the vol. control, I get very solid breakthrough of local radio stations.

3. In any case, the amplifier doesn't amplify (major drawback :-))

4. Although it's a new component, the volume control sounds scratchy. I don't *think* it's worn, but this is possible I suppose.

I've checked the connections thoroughly, swapped the chip for a similar one (LM386-1), and visually checked the caps (I'll put a meter on them if I decide to strip it down and rebuild).

Is this one for the bin, or can anyone suggest anything else to test ?

73

David

PS, I'm off on hols on Thursday, any responses after this would be appreciated by email.

--

David Byrne, Abacus Software, London, UK Tel: +44 (0)71 930 4884
Email: dmb@abacus.demon.co.uk Fax: +44 (0)71 839 7445

Here's a koan: If you have ice-cream I will give you some. If you have none, I will take it away from you. (it's an ice-cream koan).

2493. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 11:08:39 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <341obn$1sqk@info2.rus.uni-stuttgart.de>
Source record: 116433

Hello Rich,

a second very important advantage of higher frequencies is the lower sky noise, together with the feasibility of extremely low noise pre amps. 0,33 or so dB on 1296 MHz.

There is an excellent publication "technical notes for EME comunication" by the Crawford Hill VHF Club.
Adress:Dick Turrin
P.O. Box 65
Colts Neck, New Jersey
07722
73, Moritz DL5UH

2494. WANTED: Thordarson Xfmrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 15:42:07 UTC
From: jcarcia@arrl.org
Message-ID: <1994Aug31.154207.18053@arrl.org>
Source record: 116434

Does anyone know of a sourse ("new" or used) for Thordarson transformers?
I'm looking for type T5736 af transformer.

Nope. Ocean State, All-Electronics and some of the local shops don't carry
them.

Thanks.

Joe, NJ1Q

--
Joseph Carcia, NJ1Q | "The surest sign that Intelligent
ARRL Outgoing QSL Service Mgr. | life exists elsewhere in the Universe
American Radio Relay League | is that NONE of it has ever visited
225 Main St. | the EARTH!" - Calvin & Hobbs

2495. Re: FSTV Modifying a Gemini RABBIT for amateur service?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 17:20:58 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <6898@uugate.wa7slg.ampr.org>
Source record: 116435

The RABBIT transmitters that I have seen are free-running oscillators centered on approximately 915 MHz. It runs standard AM + audio subcarrier video modulation. This is because the "receiver" is simply a downconverter, taking the transmitted signal and shifting it down in frequency.

Since it runs AM (I'm not sure if they even bother with VSB filtering... I doubt it...) it is not directly FSKable. Because of their AC coupling, they are probably not even suitable for direct ASK, either.

Of course, if you wanted to use this as foundation for such a transmitter, one would want to note that if it is indeed a free-running osciallator, one woule expect it to drift several hundred KHz, at least! This will hardly bother a video signal, but with the data rates you are likely to be able to handle over the air (<couple megabaud) some sort of frequency stability or receiver tracking would be appropriate. A free-running oscillator is very easy to FSK. One would want to shape the data prior to modulation as well.

As for the receiver, you are on your own. You may be able to use the original downconverter (I don't know if it has a free-running LO or not) to get the signal down to a reasonable frequency. For data rates <1 megabaud (it is actually rated to 500 kbaud) the MC3356 is a good choice: It contains its own LO, mixer, limiter, discriminator, and slicer. A similar circuit is the MC13055. It is similar to the MC3356 except that it doesn't have the LO or mixer, and its Discriminator/Slicer has been modified to work up to 2 mbaud (it has been pushed to 10 mbaud experimentally)

The point being, is that either of these chips can be operated at the original output frequency range of the converter (70 MHz or so - the Channel 3 or 4 region). Good luck in finding either of these chips, though. I'm given to understand that they are in chronic short-supply. As a possible substitute, the NE604 (or even the NE605) has enough discriminator bandwidth to allow it to operate at several hundred kbaud. You'd need to supply your own slicer, but if you already got as far as putting the '604 online, adding the LM311 as a slicer would be trivial...

What is *not* trivial (and appears - to me at least - is that the need for some-thing that can operate at those dreamed-of baud rates is glossed-over. Keep in mind that most things (TNC2 with the super-fast, killer clock speed option) is unlikely to work much above 56 kbaud, as is the Data Engine. Your choices appear to be (at least in current context) are, in rough order of handling high-speed data, are the PI2 card, the Gracilis PackeTwin, and the Gracilis PackeTen. The former two can reputedly handle several hundred kbaud, while the latter can handle well over a megabaud of sustained throughput on its multiple ports.

One final thing about a rabbit-for-data is that the data exchange needs to go both directions. Would one plan to "key" the rabbit transmitter? Certainly, it wasn't intended to be keyed at all (most video modulators take 10's to 100's of milliseconds to stabilize...) so I suppose that a full-duplex system was implied. If it is with exactly one other station you wish to communicate, then full-duplex is precisely what you need and should work toward.

If you wanted to use the "rabbit transmitter" as a hub of a multiple-access data network (slightly similar to 'hubmaster') then you'd have to work out that set of details, too... (i.e. what the "return" frequency ought to be, the data rate, protocol set, etc...0

<Clint>

Internet: clint@uugate.aim.utah.edu
Amprnet: ka7oei@uugate.wa7slg.ampr.org

2496. Re: SSTV--Published Mac/PC-based projects? FSTV frame-->SSTV projects?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 18:43:54 UTC
From: johnl@world.std.com
Message-ID: <CvExD7.3Lu@world.std.com>
Source record: 116436
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <33r9v4$9c9@dewey.cc.utexas.edu>,
Robert Camama <rcamama@dewey.cc.utexas.edu> wrote:
>
>Hello,
>As the header suggests, I'm looking around for a few published SSTV projects.
>The ones I seek fall into two groups:
>
>1) Anyone know of SSTV hardware/software projects that are based on
>either Mac or PC systems. Info on Mac-based projects preferred, since I can
>get to them more often than PCs, but will gladly accepts suggestions on either
>systems.

VIDEO CONFERENCING OVER HAM RADIO

For those not familiar with SSTV, it allows you to enhance your
communications by including full color images. Instead of JUST TALKING
about a new boat, pet dog, grandchild, or whatever, you can exchange
full color pictures over ham radio using a voice transceiver.
A few years it cost kilobucks to buy special purpose equipment.
Today you can get started with a PC, a few $ of parts from Radio Shack
and free software. It's fun. It's interesting. It isn't expensive anymore.

Now back to the question ....

I try to keep up on everything happening in SSTV and never heard of anything
for the Mac. There have been a few homebrew SSTV projects for the IBM PC
the last couple years:

73, August 92 - ViewPort VGA
QST, January 93 - Pasokon TV
QST, January 94 - Vester

For more background on SSTV, products available, a bibliography, etc.
grab a copy of /pub/ham-radio/sstv_wefax_info from ftp.cs.buffalo.edu.
I'll gladly e-mail a copy to anyone to can't snatch a copy by ftp.

For a reprint of the January 93 QST article, send an SASE to:

John Langner
115 Stedman St. #U
Chelmsford, MA 01823-1824

>
>2) Any published projects involving hardware exclusively meant for

>conversion of fast-scan video frames into SSTV-format images?

The articles mentioned above only deal with sending and receiving images with voice transceivers. They do not address the problem of getting video (from a TV camera) into the computer. You will need a framegrabber to do this.

>
>
>Thanx in advance,

You're welcome.

>R. Camama
>

73,
John WB2OSZ

2497. ad-Hoc transmitters (was: Re: regenerative sets and selectivity)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 19:24:59 UTC
From: nuke@netcom.com
Message-ID: <nukeCvEz9o.8Gn@netcom.com>
Source record: 116437
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

In article <1994Aug30.221728.22347@vfl.paramax.com>,
Pete Rossi <rossi@VFL.Paramax.COM> wrote:

>Superhets radiate too!! I discovered recently while trying to listen to
>a repeater on 444.0 MHz I kept hearing various carriers and noises come
>and go as I drove around. They sounded very "local" since often they were
>full quieting but they would have lots of very deep fades then disappear a
>half mile down the road... then come back... then disappear.
>
>Turns out what I was hearing was the local oscillators in other car radios
>tuned to a popular local FM station on 100.3 MHz

I found out last weekend that the mysterious audio noise marker
generator that I had been hearing on 2 m was actually my CD-boom box!
Every 90 kHz a nice bit of noise. Anyone know what it might be?
servo-positioner for the laser diode, maybe?

Bill "TVI, nuthin!"

--
Bill Newcomb "Name them."
nuke@netcom.com -Dilbert

2498. Schematic CAD program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 21:40:51 UTC
From: beau@enterprise.america.com
Message-ID: <342td3$ndg@enterprise.america.com>
Source record: 116439

```
I am looking for a shareware schematic drawing pgm. It doesn't need an
autorouter and must be able to work on a 8086 machine.

_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/ _/
_/ _/
_/ Internet = beau@enterprise.america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/_/
```

2499. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-08-31 22:38:00 UTC
From: art.harris@woodybbs.com
Message-ID: <93.1954.7584.0NFB2F16@woodybbs.com>
Source record: 116438

In <CvBD3H.2MM@usenet.ucs.indiana.edu>, Gene Battin, N9XAM wrote:

>In article <93.1891.7584.0NFB2E97@woodybbs.com>, Art Harris
>(art.harris@woodybbs.com) wrote:

>> The question then becomes: What feedline will give you the lowest loss
>> while allowing the transmitter to put out full power. The lowest loss
>> line may not necessarily be the one that gives the lowest SWR. Also, if
>> the line is not perfectly matched to the antenna, the load that the
>> transmitter sees will vary with the length of the line, ALTHOUGH THE SWR
>> WILL NOT VARY.

>> Since virtually all rf wattmeters and directional couplers are 50 ohm
>> devices, I would probably go with a low loss 50 ohm line. I would trim
>> the dipole for minimum SWR. If the rig didn't like the impedance it was
>> seeing, as evidenced by reduced output, I would adjust the line length
>> until the rig was putting out full power.

>Just wanted to say, thanks, Art, for the clear exposition of this.
>This explains what I've seen when trying to set up a 40 M dipole, and
>makes the fix clear! (I couldn't understand why I saw less output as
>trimming brought the SWR down.) Now I know what was happening and,
>more importantly, what to do about it.

Ok Gene, let us know how you make out. Remember that your forward power
may decrease as your SWR is lowered, even if the rig is putting out
full power. True power is forward power minus reflected power; that's
what you want to maximize. As you lower SWR, both the forward and
reflected power will drop.

73
Art N2AH

2500. Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 00:51:41 UTC
From: zelle@cs.utexas.edu
Message-ID: <3438it$ah1@phobos.cs.utexas.edu>
Source record: 116440
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

I started a recent thread on regenerative receivers which eventually turned into an interesting discussion superegenerative sets. I also got a number of very interesting direct responses, however, all the info has lead to more questions. So I would like to pose a more general question to the wisdom of the net. Namely, what type of receiver would you recommend for a small portable shortwave. Here are the general design specs I'm working under:

(Relatively) small parts count. I want to keep it small with simple "ugly" construction. (I don't like etching boards). Low battery drain. Simple, reliable design (easy to get working without sophisticated test quipment as I still build these guys without a scope). Enough sensitivity to receive moderate to strong international broadcasters with only a short makeshift antenna. Enough selectivity that I have a reasonable chance of single-signal reception in the international shortwave bands. Frequency coverage need only be one band (probably 49 meters), but others would be a plus.

Here're some design ideas to get the ball rolling:

Superhet: It's been argued that no alternative (regen, super, dc) can give similar performance. But... It would have to be dual conversion to eliminate images. Perhaps a couple of NE602s? Would simple LC filtering of a couple of IF stages give sufficient ultimate selectivity? What about using ceramic filters, first stage 10.7 Mhz, second 455Khz? Doesn't sound very simple. I've built nice sets, but those designs are not suitable for a portable.

Regenerative: Smaller parts count, but there seems to be broad disagreement on whether selectivity would be adequate at 5-10 Mhz. Additional advantage of allowing multiple bands by simply switching a single tuned circuit.

SuperRegen: Don't know too much about this. Any pointers to possible design articles? What is the advantage over regnerative?

Direct Conversion: Simple design, audio filtering easy. But... A free-running VFO will not be stable enough for good-quality AM detection without frequent retuning (I know, I've built some very good ones, but any tiny drift really beats with the carrier and ruins the audio). What about phase-locking directly to the incoming signal (is that synchrodyne?). I've never designed with phase-locked loops, so pointers here would be very helpful. Is it feasible below 10 Mhz that there is some off-the-shelf chip which would provide suitable VCO and phase comparator? Is it easy to get sufficent VCO range and small enough locking range that neighboring signals could actually be

independently captured, or would strong signals hog the PLL?

Those are the ideas. I'm particularly interested in the Regen and synchrodyne ideas. I would especially appreciate ideas on the latter. Has there been a construction article for a synchrodyne receiver? If the general wisdom is that only a superhet will suffice, that's the way I'll go. I just don't have time to try everything.

This is a bit of a long post, but I hope it will generate some interesting discussion of possible designs.

--John
--
*** John Zelle e-mail: zelle@cs.utexas.edu ***
*** Taylor Hall 2.124 motto : I'd rather write programs which ***
*** University of Texas write programs than waste my ***
*** Austin, TX 78712-1188 time writing programs ***

2501. Phase Locked Loops

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 04:02:33 UTC
From: dennis.mcguire@scpcug.com
Message-ID: <94090513254820@scpcug.com>
Source record: 116441

Can anyone tell me, in relatively simple terms, how a Phase Locked Loop
circuit works?
--- FreeMail 1.09
* Origin: Tim's BBS * Erie, PA * 814-825-1731 * (1:2601/566)

2502. Re: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 05:18:46 UTC
From: dburton@salzo.Cary.NC.US
Message-ID: <ZLkyRc8w165w@salzo.Cary.NC.US>
Source record: 116442
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc

wwg@coutts.UUCP (Warren Gay) writes:

> Actually, come to think of it... why not put the TUBES in the top
> rack? Get them all nice and spiffy clean... they're least likely
> to suffer from it, assuming they can't move much!
. . .
> Then the side tray where the silverware normally goes, I could leave
> my favourite pliers, screwdrivers, and open-end and box-end wrenches.

Well, I wash my baking potatoes in the dishwasher, so why not? :-)
(But take out the tools and blow-dry them before they rust.)

-Dave Burton <dburton@salzo.cary.nc.us>
For my PGP public key, finger dburton@cybernetics.net or dburton@ios.com

2503. Re: regenerative sets and selectivity

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 15:00:58 UTC
From: dnewkirk@arrl.org
Message-ID: <1994Sep1.150058.7841@arrl.org>
Source record: 116444
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Brent G. DeWitt (bdewitt@csn.org) wrote:

: In general, regens DO radiate! The FCC requires that they be CERTIFIED
: with the FCC before commercial sale, while super-hets only require
: notification. None of this means a thing as an experimenter building one
: item for his/her use, but it does imply that history has shown regens to
: be pretty good transmitters......

I just took at look at Part 15 in the most recent CFR 47 I could get my hands on rapidly -- 1988 -- and although I again see that although FCC requires superregnerative receivers to be certified -- superregenerative receivers for the CB band, for 30-901 MHz, and for 935-940 MHz, that is [don't have the book right in front of me, so I may have one or two of these ranges slightly bollixed] -- I can't find anything about *regenerative* receivers. I'd appreciate receiving information to the contrary.

Regards,

David Newkirk, WJ1Z
Senior Assistant Technical Editor, *QST*

2504. Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 17:11:49 UTC
From: pelt@vt.edu
Message-ID: <pelt-0109941312410001@box185.ams.vt.edu>
Source record: 116447

Does anyone know of software to develop circuit boards designed for the Mac???

--
Ranson Pelt
pelt@vt.edu
nz4i

2505. Re: Ham-Homebrew Digest V94 #260

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 19:25:45 UTC
From: Dale_Croft@comsys.rockwell.COM
Message-ID: <9408017784.AA778451145@SmtpSend.comsys.rockwell.com>
Source record: 116443

>Date: Tue, 30 Aug 1994 21:21:44 -0700
>From: ihnp4.ucsd.edu!usc!nic-nac.CSU.net!charnel.ecst.csuchico.edu!yeshua
>.marcam.com!MathWorks.Com!udel!news.sprintlink.net!nwnexus!scipio.cyberstore
>.ca!yvr.cyberstore.ca!fng@network.ucsd.edu
>Subject: 2M Amp ('73
>To: ham-homebrew@ucsd.edu

>I'm building the 2m amp project in '73 magazine (Nov '93). The article
>seems pretty straight forward. I have one question though. For the
>trimmers, they use ARCO 423's and an ARCO 404. Nowhere in the article
>does it say what the adjustable capacitance range for the two trimmers
>are. Does anyone know so I can find an equivalent? Thanks!

>Felix
>--
>Felix Ng - Vancouver, British Columbia, Canada
>fng@cyberstore.ca / Fax: 604-322-5936 / VE7YDG / D.G.I.F. #8767
I looked up both components and did some cross reference checking.
ARCO Electronics |
400 Moreland Rd. |
Commack,NY., 11725-5707 |

ARCO 423 mico comresion trimmmer, 7-100 pfd: .750 x .500 x .375 in, screw
slot adjust, 175 vdc

ARCO 404 mico compresion trimmer 8-60 pfd : .562 z .375 z .125 in, screw
slot adjust, 175 vdc.

Not familuar with your referenced article in 73 but the capacitor bodies are
probably part of the electrical transmission line matching circuits physicaly
.
I am trying to say the dimensions of substitutes may be critical! There are
no other vendor PN equivelent to the above in the NSN system.

73, K5VMU |...Opnions expressed are mine alone
dale_croft@comsys.rockwell.com |Rockwell does not acknoledge nor endorse them!

2506. Re: Ham-Homebrew Digest V94 #260

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 19:26:43 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3459tj$3b8j@yuma.ACNS.ColoState.EDU>
Source record: 116449

In article <9408017784.AA778451145@SmtpSend.comsys.rockwell.com>
Dale_Croft@comsys.rockwell.COM writes:
>>I'm building the 2m amp project in '73 magazine (Nov '93). The article
>>seems pretty straight forward. I have one question though. For the
>>trimmers, they use ARCO 423's and an ARCO 404. Nowhere in the article
>>does it say what the adjustable capacitance range for the two trimmers
>>are. Does anyone know so I can find an equivalent? Thanks!
>>fng@cyberstore.ca / Fax: 604-322-5936 / VE7YDG / D.G.I.F. #8767
> ARCO 423 mico comresion trimmmer, 7-100 pfd: .750 x .500 x .375 in, screw
> ARCO 404 mico compresion trimmer 8-60 pfd : .562 z .375 z .125 in, screw

Circuit Specialists sells 'em.
1-800-528-1417
Box 3047
Scottsdale, Az. 85271

423's: cat no. 423 $2.32 ea
404's: 404 $2.36 ea

Galen, KF0YJ

2507. ARCO Trim Cap Specs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 21:17:01 UTC
From: frbspd@crl.com
Message-ID: <345gcd$fta@crl6.crl.com>
Source record: 116445

Since questions seem to come up rather often about ARCO caps, I am posting the following chart of ARCO type and its capacitance range. Hope this helps since a lot of construction articles give the type without any clue to value.

Circuit Specialists (800) 528-1417 (602) 464-2485 in Arizona stocks most of these units.

Type Value Range - pf

Minature Trimmers (Type 40)

400 2.5 - 7
402 4 - 20
403 8 - 45
404 12 - 65
405 16 - 90
406 25 - 115

Minature Trimmers (Type 42)

420 2.5 - 12
421 3.5 - 25
422 7 - 40
423 16 - 100
424 25 - 150
425 40 - 200
426 55 - 250
427 75 - 300
428 95 - 350
429 115 - 400
4210 130 - 450
4211 150 - 500
4212 170 - 550
4213 200 - 600
4214 220 - 650
4215 240 - 700

Standard Trimmer (Type 46)

460 3 - 15
461 5 - 30
462 10 - 80
463 20 -180
464 45 - 280
465 75 - 380
466 105 -480

467 140 - 580
468 175 - 680
469 215 - 790
4610 260 - 900
4611 300 - 1000
4612-1 330 - 1100
4613-5 360 - 1200
4614 380 - 1305
4615 420 - 1400

==========

Stephen Dunifer

2508. Enclosures for Xmitters & Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 21:38:06 UTC
From: frbspd@crl.com
Message-ID: <345hju$ggm@crl6.crl.com>
Source record: 116446

We are making extruded aluminum enclosures available for the building of small transmitters and amplfiers. The enclosure has a built-in heat-sink that will handle up to around 30 watts without any problem. It is comprised of an extruded channel 6 inches long, 3 1/2 inches high and 4 3/4 inches wide with a mating extruded lid (your basic brick). Blank end plates are supplied for in and out connectors or you can request plates punched for S0-239 on either or both ends at no additional charge. Internal to the enclosure, there are horizontal slots down the inside walls. One can easily mount an exciter on a flat piece of aluminum and slide it in with the power amp mounted below. It works very well with the hybrid amp modules. Cost for the enclosure is $30.00

One of our PLL designs is being reset to work at 2 meters, it puts out 1/2 watt which will drive most of the 5 to 30 watt modules very well. This will be available as a kit for $95. Further, we have 6-8 watt, 15 watt and 24 watt amplifier kits which only require 1/2 watt drive, at most.

Our work primarily consists of designing and manufacturing low power, low cost FM transmitters for native and community broadcasters outside the Unites States. We do what we can to encourage and keep the spirit and practice of hands-on and homebrew alive.

Stephen Dunifer
FRB

2509. Re: Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-01 22:00:23 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <345itn$29@vixen.cso.uiuc.edu>
Source record: 116448

John Marvin Zelle (zelle@cs.utexas.edu) wrote:
> I started a recent thread on regenerative receivers which eventually
> turned into an interesting discussion superegenerative sets. I also
> got a number of very interesting direct responses, however, all the
> info has lead to more questions. So I would like to pose a more general
> question to the wisdom of the net. Namely, what type of receiver would
> you recommend for a small portable shortwave. Here are the general design
> specs I'm working under:

> (Relatively) small parts count. I want to keep it small with simple
> "ugly" construction. (I don't like etching boards). Low battery
> drain. Simple, reliable design (easy to get working without
> sophisticated test quipment as I still build these guys without a
> scope). Enough sensitivity to receive moderate to strong
> international broadcasters with only a short makeshift antenna.
> Enough selectivity that I have a reasonable chance of single-signal
> reception in the international shortwave bands. Frequency coverage
> need only be one band (probably 49 meters), but others would be a
> plus.

This size/# of parts restriction would severely limit your choice.
I could be wrong, but in my opinion you really have to stick to a
very simple design if you use "ugly" or "dead-bug" construction
because even a single-superhet AM broadcast receiver built this way
would not easily fit in your pocket. On the other hand, sensitivity
and frequency coverage would be no problem if you only want to
listen to strong SW stations.

> Here're some design ideas to get the ball rolling:

> Superhet: It's been argued that no alternative (regen, super, dc) can give
> similar performance. But... It would have to be dual conversion to eliminate
> images. Perhaps a couple of NE602s? Would simple LC filtering of a couple
> of IF stages give sufficient ultimate selectivity? What about using ceramic
> filters, first stage 10.7 Mhz, second 455Khz? Doesn't sound very simple.
> I've built nice sets, but those designs are not suitable for a portable.

Designing a narrow LC filter with discrete components is not an easy task,
as I remember having a rather hard time building a 5-pole BPF with 100kHz
BW even with a network analyzer. On the other hand, ceramic filters
are readily available, small, and convenient. These are also available in IF
other than 10.7MHz or 455KHz, for example, 4.5 ot 5.5MHz. So, for double-het,
you can use one with 150KHz at 10.7MHz and another with 6 or 8KHz BW at
455KHz. By the way, there are several ICs with mixer, diode and
ring detecters, gain stages and more that will make your design simple.
Suggestion: go get a simple shareware PCB design software and etch your

own board. It's not that bad. (It's much better than making pattern from
the scratch all by hand as I used to do in the past.)

> Regenerative: Smaller parts count, but there seems to be broad disagreement
> on whether selectivity would be adequate at 5-10 Mhz. Additional advantage
> of allowing multiple bands by simply switching a single tuned circuit.

> SuperRegen: Don't know too much about this. Any pointers to possible design
> articles? What is the advantage over regnerative?

I'd rather call this a radiator or a jammer. Once built a VHF one and
found it causes much more TVI than my 100W TX on 10m. Then again, I don't
know much about these guys as I gave up on them so early.

> Direct Conversion: Simple design, audio filtering easy. But... A
> free-running VFO will not be stable enough for good-quality AM
> detection without frequent retuning (I know, I've built some very good
> ones, but any tiny drift really beats with the carrier and ruins the
> audio). What about phase-locking directly to the incoming signal (is
> that synchrodyne?). I've never designed with phase-locked loops, so
> pointers here would be very helpful. Is it feasible below 10 Mhz that
> there is some off-the-shelf chip which would provide suitable VCO and
> phase comparator? Is it easy to get sufficent VCO range and small
> enough locking range that neighboring signals could actually be
> independently captured, or would strong signals hog the PLL?

Maybe the best concept in simple receiver design and also the best candidate
for yours, if PLL is simple and easy for you. As I understand, PLL was
developed for the homodine (or synchrodyne) receivers which is an ancestor
to the direct-conversion receiver. I once saw a one-chip AM synchronous
detection receiver based on NE562 (or 564?) PLL chip, which was amazingly
simple. VCO range and locking wouldn't be a problem over 1MHz segment
at HF.

> Those are the ideas. I'm particularly interested in the Regen and synchrodyne
> ideas. I would especially appreciate ideas on the latter. Has there been a
> construction article for a synchrodyne receiver? If the general wisdom is
> that only a superhet will suffice, that's the way I'll go. I just don't have
> time to try everything.

> This is a bit of a long post, but I hope it will generate some interesting
> discussion of possible designs.

Good luck.

> --John
> --
> *** John Zelle e-mail: zelle@cs.utexas.edu ***
> *** Taylor Hall 2.124 motto : I'd rather write programs which ***
> *** University of Texas write programs than waste my ***
> *** Austin, TX 78712-1188 time writing programs ***

Han..

--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

2510. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 02:11:07 UTC
From: jmollan@egreen.iclnet.org
Message-ID: <1994Sep2.021107.12466@egreen.wednet.edu>
Source record: 116451

In article <9407307782.AA778263641@mails.imed.com>,
Mack Ray <mack@mails.imed.COM> wrote:
> David Newkirk's post in digest #258 prompted this post. I have first
> hand experience with the receiver radiation problem he described. I
> work in an all metal building which thankfully does have windows. I
> have an antenna for FM broadcast near one office with a window. My
> favorite station is 102.9 but several others' favorite station is 92.1
> including the person whose office is below my antenna. Add 10.7 to
> 92.1 and you get 102.8 which completely wipes out my station. I
> looked at it with the spectrum analyser and the LO from the guy's boom
> box is 5 db stronger than the signal I am trying to receive.
>
> This should make it obvious why they do not want you to use a portable
> FM radio in an aircraft where the LO can easily be in the aircraft
> band.
>
> My experience with cheap boom box type radios and small portable
> radios has been consistent. They make incredibly good transmitters!
>
> Ray
> WD5IFS
> mack@mails.imed.com
>

Back in the days of WW II the German U-boat crews would tune receivers to
Allied radar frequencies to see if there were any planes or ships near. The
Allies retaliated by turning their radar off and listening for the
oscillators in the U-boats' receivers. Apparently this worked well
enough for the practice to be used during the rest of the war.

In the days of VHF AM, T-hunters would quite often listen for the signal
being radiated by the superregen receivers on the infamous Heath Twoers
and Sixers as they got close to the target.

I would be interested any other interesting stories along the same line.

73, John
AE7P

2511. Zenon strobe-light circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 03:04:43 UTC
From: parkerbk@sd2.af.mil
Message-ID: <1994Sep2.030443.6286@afit.af.mil>
Source record: 116453

I realize this isn't a radio question however it is
requiring a homebroow idea (s).
What I need is a circuit to operate a xenon strobe
light at least two flashes per second on 12 volts.
any ideas would be greatly appreciated.
e-mail- parkerbk@sd2.sews.wpafb.af.mil
Thanks
Keith

2512. EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 04:00:52 UTC
From: laplante@rsvl.unisys.com
Message-ID: <laplante.3.011A184A@rsvl.unisys.com>
Source record: 116450

What are people using for power amplification on EME? I'm looking at 2m or 432, and trying to keep the costs down somewhat. How much power are you using, and what is your amp... homebuilt, surplus, used....?

2513. Re: EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 08:19:51 UTC
From: deap1032@servus11.rus.uni-stuttgart.de
Message-ID: <346n77$1bq6@info2.rus.uni-stuttgart.de>
Source record: 116452

In article <laplante.3.011A184A@rsvl.unisys.com>,
Bryan LaPlante <laplante@rsvl.unisys.com> wrote:
>What are people using for power amplification on EME? I'm looking at 2m or
>432, and trying to keep the costs down somewhat. How much power are you using,
>and what is your amp... homebuilt, surplus, used....?

You should have around 1KW, so the device has to be 3CX800 or better. Recently
there are good and cheap russian tubes appearing on the market. The other
expensive component of cause is the transformer, Try to find someone who
has started to build an amp, lost interest and sells the components.

73, Morritz DL5UH

2514. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 13:22:41 UTC
From: dalton@explo.Geop.UBC.CA
Message-ID: <DALTON.94Sep2062241@explo.Geop.UBC.CA>
Source record: 116454

In article <1994Sep2.021107.12466@egreen.wednet.edu> jmollan@egreen.iclnet.org (John Mollan - Harm) writes:
Back in the days of WW II the German U-boat crews would tune receivers to Allied radar frequencies to see if there were any planes or ships near. The Allies retaliated by turning their radar off and listening for the oscillators in the U-boats' receivers. Apparently this worked well enough for the practice to be used during the rest of the war.

In the days of VHF AM, T-hunters would quite often listen for the signal being radiated by the superregen receivers on the infamous Heath Twoers and Sixers as they got close to the target.

I would be interested any other interesting stories along the same line.

Is there a U-shaped waveguide in the ocean due to the temperature and salinity stratification (and association changes in electrical conductivity and c) that would cause radar and acoustic waves to turn? If so, does anybody know what the length and turning depth scales would be for different frequencies, polarizations, and depth profiles? Probably whale and dolphin frequencies are an important subset or the acoustic set, and the radar frequencies or even infrared frequencies might be important for certain biota.
--
David Dalton ----geophysics Ph.D student----- <Dalton@Geop.UBC.Ca> ---
Dept. of Geophysics & Astronomy, (604) 822-2267
2219 Main Mall, University of British Columbia fax 822-6047
Vancouver, Canada V6T 1Z4 home 733-1303

2515. Design of Helical Resonator Filter for VHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 13:47:04 UTC
From: jernandez@pbs.org
Message-ID: <jernandez-020994084704@jernandez.pbs.org>
Source record: 116455

Has anyone had luck building a helical resonator filter at VHF? I have the design equations, but it appears that the design may be to unforgiving for simple construction. My requirements are 160 MHz center frequency with a 2 MHz 3 dB BW.The stopband slope should have frequencies at 158 MHz down >50 dB. Has anyone had luck designing and building similar filters?

--
John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

"My Favorite Location On the Pennsy" MP-46.8 Plainsboro, NJ

E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

2516. Re: ad-Hoc transmitters (was: Re: regenerative sets and selectivity)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 16:52:23 UTC
From: wells@fc.hp.com
Message-ID: <347l87$s9n@tadpole.fc.hp.com>
Source record: 116456
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Bill Newcomb (nuke@netcom.com) wrote:

: I found out last weekend that the mysterious audio noise marker
: generator that I had been hearing on 2 m was actually my CD-boom box!
: Every 90 kHz a nice bit of noise. Anyone know what it might be?
: servo-positioner for the laser diode, maybe?

: Bill "TVI, nuthin!"

Most likely it is a bit of the clock that is used for the serial input
D/A converter. The base frequency is 44.1 (I think) so that would a 2x
oversample clock of 88.2 kihz. Most likely a bit of coperclad carefully
placed around the D/A converter area would fix it up fine.... No guarentees
by the way ;-)

John WA0LHB in the Fort

2517. Re: Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 20:36:34 UTC
From: jerryg@teleport.com
Message-ID: <3482ci$i1d@kelly.teleport.com>
Source record: 116457

John Marvin Zelle (zelle@cs.utexas.edu) wrote:
> question to the wisdom of the net. Namely, what type of receiver would
> you recommend for a small portable shortwave. Here are the general design
> specs I'm working under:

I occasionally drop everything and take off travelling, living for a
year or so out of a daypack. A shortwave radio is nice to pack,
especially if you can't read the local newspapers.
My criteria are:
small and light as possible
cheap and replacable (so I don't spend my time guarding it)
dependably receives major broadcasters (usually the BBC)

Last time out I travelled with the smallest comercial job I could find.
But I have been thinking I could do better.

A small shortwave to AM broadcast converter could be built with little
more than the Phillips NE602, a crystal, and a tuned antenna coupler.
With surface mount parts, it could be the size of a fingernail.
If the crystal is around 8.5Mhz, could choose between the 31 and 41
meter shortwave bands by retuning the antenna coupler.
A 6.0 Mhz crystal would hit 60 and 41 meters.

The converter would be coupled to an AM broadcast band radio by winding a
wire around the AM radio's ferrite loop. Since the converter would be
under crystal control, the radio must be tuned. The radio is shielded
from local broadcast band stations by wrapping it in tinfoil (with holes
cut for the controls).

Alternately, we could pick a dead spot on the AM radio and tune the
converter (doing away with crystal control). But that would make the
converter much bigger, and would not be as stable.

Small AM broadcast radios are usually easy to replace anywhere.
Since the converters are so small, could carry a half dozen of them.
Pack them in different places, so it is unlikely that you should ever
loose them all. Could hand them out to aquaintences. And they would
make for interesting conversations with bored spy-crazy inspectors at
isolated frontiers.

Automobile radios would also be ideal for use with such a converter,
they are always well shielded to avoid ignition noise. Seldom hear
anything when the antenna cable has been disconnected. Shortwave
reception in the car could be very nice, especially if you often travel
through regions not covered by comercial broadcast stations.
Unfortunately, those dang digitally tuned units that are in most cars

now take so long to recover when changing frequency. Would be really aggravating to tune across a shortwave band with one (or a comercial broadcast band, for that matter).

If you wish to build a complete radio, I would think that such a converter followed by a regenerative detector would be fun to play with. The oscillator on the converter would be tuned, not crystal controlled. The detector would operate at a constant frequency, perhaps 1 Mhz. A bit of LC filtering in front of the detector would help avoid overloading it. Since the detector is operating at a reasonably low frequency, selectivity can be very good. As a bonus, Amateur CW and SSB signals can be recieved.

Rumor has it that Digi-Key is selling the NE602, though I assume that is only the DIP through-hole version (I don't see it in their catalog). Arrow sells all the Phillips parts (including the surface mount NE602AD), plus the Intel, Lattice, Motorola, TI, AMD and Quality Semi lines (and plenty more). The hitch is that they have a $50 minimum/order, $25 minimum per line item. Anybody know of any other sources?
The NE602 should run about $2 US each.

BTW, I have tried to post this before, but don't think it got out.

jerryg KE7ER

2518. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 20:53:11 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <778539191snz@arkas.demon.co.uk>
Source record: 116459

In article <34075f$6sl@canopus.cc.umanitoba.ca>
rflukes@silver.cs.umanitoba.ca "Richard F. Lukes" writes:

[snip]
> I would also like to know what frequency is the best choice for EME.
> Aside from the obvious practicality of generating big power (1KW)
> at frequencies about 432MHz, there must be some other factors
> such as reflectivity of signals from the moon, and absorption of
> signals by the atmosphere.
>
> What about 900, 1296, and 2304MHz? What are some of the advantages
> of these over say 2m? Obviously, a high gain antenna is much smaller.

Absorption tends to become more noticeable up around 4 GHz and above.

The surface alignment requirements of parabolic antennas become more critical as the frequency increases, i.e. wavelength decreases, and hence one has to pay more attention to correctly shaping the parabolic surface.

On a slightly different note ...

I'm still kicking myself that I never had the opportunity to attempt moonbounce at 12 GHz. I had available (for a while) a 14 metre diameter Cassegrain-fed parabolic dish - gain = 64 dBi, G/T = 38 dB/K - and two 7 metre diameter Cassegrains which weren't carrying traffic. The problem was that I could only muster 50 W at 12 GHz. Now, if I'd had a 14 GHz LNA at the time, I could've put 2 kW up (or 4 kW if I phased the amplifiers at the input). All antennas were fitted with computer controlled tracking systems so that following the moon would not have been a problem.

However, numerous discussions with my colleagues indicated that the moon may very well absorb all incident 12-14 GHz radiation. Hence, the attempt became uneconomical to try ... however, it would have been interesting :) And, I was just too busy with other things ... like work!

73's

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2519. Ramsey 10 Meter FM Receiver Kit Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 21:24:05 UTC
From: marwynn@phoenix.phoenix.net
Message-ID: <34855l$ogc@dolphin.phoenix.net>
Source record: 116458

I have built the Ramsey model FR-10 10 meter fm receiver kit. I want to use it with a different band width. I am going to use it as a 10 ghz receiver. I understand to change the band width requires repalcing one of the ceramic filters with a capacitor. Which filter should be change the 10 20.7 MHZ or the 455 kc filter? And what value of cap whould be used? .01 mfd ? I would apprecate your help in this mater. 73's

--

Marwynne Kuhn WB5PWG

Email : marwynn@phoenix.phoenix.net
Prodigy: KGNR42a
Packet: WB5PWG@KA5KTH.#SETX.TX.USA.NA

2520. Manual for Dentron MLX-MINI 20M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 21:42:28 UTC
From: johnsong@aeon16.eglin.af.mil
Message-ID: <348684$i23@kbad.eglin.af.mil>
Source record: 116460

Greetings!

I am posting this for a friend who left his manual and schematics somewhere in Turkey. He has a Dentron MLX-MINI 20 meter single-band CW and SSB rig made in the early '80s. Only a few hundred were made, and the serial number is "EXPERIMENTAL." If you have (or know someone who has) a transciever like it, please help!

My friend will happily pay copying and mailing costs for the manual and/or schematic. Thanks in advance!

Regards,

Gary Johnson, AD4DR
johnsong@tsun.eglin.af.mil

2521. Re: Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 22:00:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19940902220059OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 116371

> For AM detection you could use the RSSI (Received Sig. Strength
> Indicator) output of the '605 (it has a good log curve of almost
> 90db!) if you didn't mind a bit of audio distortion, or a simple
> envelope detector could be used.

I remember seeing an article in RF design (?), where the RSSI
output was run through an anti-log circuit to get linear AM
output...

2522. Re: Design of Helical Resonator Filter for VHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 22:28:12 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3488ts$4ni@hpscit.sc.hp.com>
Source record: 116462

In article <jernandez-020994084704@jernandez.pbs.org>,
John J. Ernandez <jernandez@pbs.org> wrote:
>
> Has anyone had luck building a helical resonator filter at VHF? I have the
>design equations, but it appears that the design may be to unforgiving for
>simple construction. My requirements are 160 MHz center frequency with a 2
>MHz 3 dB BW.The stopband slope should have frequencies at 158 MHz down >50
>dB. Has anyone had luck designing and building similar filters?
>
>--
>John J. Ernandez
>Communication Systems Engineer
>Public Broadcasting Service
>
>"My Favorite Location On the Pennsy" MP-46.8 Plainsboro, NJ
>
>E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
>Phone: 703-739-5474 Southern Railway Historical Association
>Amateur Radio: KA2YAP

Wow. That's a 10 pole filter with 1.2% BW. It's going to have a lot of
insertion loss unless you get the unloaded Q well into the 1000's. You'll
need to make the filter quite large to do that, several cm. in diameter.
Also, you have to wind the coil on a mandrel to get very uniform spacing
and diameter, or the Q will plummet.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

2523. Unitrode 1N5767 PIN diode + TR switch design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 22:41:06 UTC
From: bruces@mpd.tandem.com
Message-ID: <1994Sep2.224106.27206@integrity.uucp>
Source record: 116368

All,

I'm planning to replace the realy on the Ramsey 2M amp (kit) with a PIN diode circuit and am looking for some info. In the ARRL Handbook, there's an HF TR switch using a Unitrode 1N5767 that's supposed to handle 100W according to the text.

1) When I try to cross the 1N5767, I get an ECG717, general purpose diode. The only PIN diodes the catalog shows are an ECG553 and 555. Does anyone know if these are acceptable replacements.

2) I plan to scale the HF design to VHF and was wondering it there are any "gotcha's (besides the standard layout considerations ,short leads, etc) when using PIN diodes in the VHF range.

Any inputs would be appreciated

| Bruce Sawtelle AX.25 : W3NJ @ N5LJF.TX.USA.NA |
| Tandem Computers, Inc. Internet : bruces @ mpd.tandem.com |
| 14231 Tandem Blvd. USENET : halley!bruces |
| Austin, Tx 78728 TCP/IP : 44.76.1.42 (w3nj.ampr.org) |
--
| Bruce Sawtelle AX.25 : W3NJ @ N5LJF.TX.USA.NA |
| Tandem Computers, Inc. Internet : bruces @ mpd.tandem.com |
| 14231 Tandem Blvd. USENET : halley!bruces |
| Austin, Tx 78728 TCP/IP : 44.76.1.42 (w3nj.ampr.org) |

2524. Unitrode 1N5767 PIN diode + TR switch design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 22:44:45 UTC
From: bruces@mpd.tandem.com
Message-ID: <1994Sep2.224445.27312@integrity.uucp>
Source record: 116467

All,

I'm planning to replace the realy on the Ramsey 2M amp (kit) with a PIN diode circuit and am looking for some info. In the ARRL Handbook, there's an HF TR switch using a Unitrode 1N5767 that's supposed to handle 100W according to the text.

1) When I try to cross the 1N5767, I get an ECG717, general purpose diode. The only PIN diodes the catalog shows are an ECG553 and 555. Does anyone know if these are acceptable replacements.

2) I plan to scale the HF design to VHF and was wondering it there are any "gotcha's (besides the standard layout considerations ,short leads, etc) when using PIN diodes in the VHF range.

Any inputs would be appreciated

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| Austin, Tx 78728 TCP/IP : 44.76.1.42 (w3nj.ampr.org) |

2525. Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-02 23:21:28 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <7785@uugate.wa7slg.ampr.org>
Source record: 116465

Hmmm... That sounds like a fun project.

I would have a tendancy to go with a semi-up-conversion receiver.

A simple (albiet not really high performance) receiver could be constructed using an NE605 (I think that that is an NE602 and an NE604 clanged together in one handy-dandy package...)

In this case, use a 10.7 MHz IF.

Some reasonably narrow (for AM, anyway) and inexpensive monolithic crystal filters can be obtained for 10.7 MHz (heck, you can order a bunch of $0.89 crystals from Jameco and make your own, if you want it <4 KHz or so... Not for 10.7 MHz, but for others...) Digi-Key has some filters for 12.5 KHz spacing that are on the order of 10 KHz wide or so (get a pair of the "2 pole monolithics" and cascade them - they are about $5.36 each in the current catalog) and have a decently sharp, but listenably wide IF.

A 10.7 MHz IF would put your image 21.4 MHz away (you would obviously have to use high-side injection for almost anywhere on HF) but if you are putting int on 49 meters, then a 16.5-17.0 MHz LO would be in order.

If you wanted, you could expand the range of the LO (as a VCO, maybe... use an NTE618 hyperabrupt tuning diode and you can get almost an octave of unswitched VCO range... at the sacrifice of stability, though...) Gee... you could make this do-hicky cover 10 meters and (ICK!) 11 meters at the same time, with the same 49 meter LO...

For AM detection you could use the RSSI (Received Sig. Strength Indicator) output of the '605 (it has a good log curve of almost 90db!) if you didn't mind a bit of audio distortion, or a simple envelope detector could be used.

Hey, you could even have an "afc" in there... use the `605's discriminator and make it "lock" on to the carrier of the AM signal and help compensate for drift...

Oh, and the RSSI could be part of your AGC circuit...

The '605, like the '602 has a fairly fragile mixer. It will be easily crushed by 500 kw shortwave transmitters, but its noise figure (<6db) is unnecessarily low for low HF if you are using a decent antenna. If you are using a telescoping antenna, then perhaps it is just fine...

Also, the '605 pulls on the order of 10 mills by itself. It has its own LO that may be free-running, or it can be xtal controlled with overtone or fundamental-mode xtals. You may be able "rubber" your LO xtal for 50 KHz and cover your interested part of the 49 meter band in a small number of xtals

with relatively good stability...

Well, I'm starting to ramble, but an up-conversion single-conversion
HF receiver would work well, I think.

If you do use an external envelope detector, just make sure you put it before
the limiter:-)

<Clint>

Email: ka7oei@uugate.wa7slg.ampr.org

2526. Re: Ramsey 2m Amplifier Brick kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 00:32:31 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CvJ2u8.DpB@utnetw.utoledo.edu>
Source record: 116461

In article <Cv5E0I.6xL@fore.com>, ed@fore.com (Ed Bathgate) writes:
>
>I am thinking of getting the Ramsey 2M Brick amp kit and the matching
>tx relay.
>
>Any experiences / opinions with this unit.
>
> 73
>
> Ed N3SDO
> Ed@fore.com
Ed,
I recently built the Ramsey 2m PA-1 and relay. The amp seems to work
fine. I run mine from my car (direct to battery) and use my HT to drive it.
My HT puts out about 0.5 watts on low power, and this gets amplified to 10
watts at the output of the amp. The relay circuit is kind of touchy with
this low of drive - they spec a low drive mod, but I didn't do it. On
high power my HT puts out about 5 watts that is amplified to close to 40
watts. I don't have lab spec readings on the power out - just my cheap
RS 2/440 SWR/POWER meter.

My biggest complaint - there is no provision for mounting the &*^%*&
circuit board!! I suppose this is to allow "a wide variety of mounting
options" but I see it as a pain!

Just my $ 0.05 (that's $ 0.02 + $ 0.03 for taxes).

Patrick KB8PYM
pouelle@uoft02.utoledo.edu

2527. Re: Phase-locked Xtal Osc

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 01:35:00 UTC
From: geoff.kennedy@woodybbs.com
Message-ID: <93.1975.7584.0NFB307C@woodybbs.com>
Source record: 116463

Whilst pondering the question of Re: Phase-locked Xtal Osc, Tomb@lsid.hp.com
sayeth unto All:

To> o> Message-ID: <Cv9u1r.Epr@hpcvsnz.cv.hp.com>
To> Newsgroup: rec.radio.amateur.homebrew
To> Organization: Hewlett-Packard

To> : I would like to build a crystal-controlled oscillator which can
To> be : phase-locked to an input signal. Has anyone done this ??

To> Gee, color TV receivers do this all the time. They get 8 cycles of

Yeah, that thought occurred to me the next day !! <GRIN>

To> something like +/- 2kHz at 2.4MHz. On the other hand, there are lots
To> of crystal oscillator manufacturers that sell VCXOs that can cover this

Hmmmm....I should check into that. Can you suggest any names ??

To> sort of range. A varicap in a parallel-mode oscillator that varies the
To> effective crystal load from a very few pF up to 15 or 20pF likely
To> would do the trick. You might want to try to linearize the freq vs

Yup......that's on my list of things to try..... :-)

To> garbage noise from the phase comparitor, though if Fin doesn't drift
To> very quickly, then perhaps you don't really need fast lock-up and a
To> slow loop filter would be appropriate.

As it turns out, the signal changes in a predictable pattern, and at
a rather slow rate, so a slow loop filter would be ideal.

Thanks for your help !!!

... A tree never hits an automobile except in self defense.
--- Blue Wave/Max v2.12
* Origin: Frog Hollow Port Moody BC 604-469-0264 (1:153/290)

2528. Re: FSTV Modifying a Gemini RABBIT for amateur service?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 02:21:20 UTC
From: sct@po.cwru.edu
Message-ID: <348mj0$av9@usenet.INS.CWRU.Edu>
Source record: 116464

In article <6898@uugate.wa7slg.ampr.org>,
ka7oei@uugate.wa7slg.ampr.ORG <ka7oei@uugate.wa7slg.ampr.ORG> wrote:
> Keep in mind that most things (TNC2 with the super-fast, killer clock
> speed option) is unlikely to work much above 56 kbaud, as is the Data
> Engine.

There's nothing wrong with having the signal on the air have a much
higher baud rate than the computer/TNC interface. The computers will
catch up in time. Until then, having fast packets and slow computers
means the modems need FIFOs in hardware or software. In exchange, you
get more computers on a channel and fewer bottlenecks.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2529. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 03:00:06 UTC
From: mtracy@arrl.org
Message-ID: <rec.radio.info-arrl.email.info_778561204@ve6mgs.ampr.ab.ca>
Source record: 116466
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command in your message.

IMPORTANT: Please use the quit command in your message. This will prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling written requests. Any questions on the info-server or the content of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the reply address is redirected to keep bounced messages from endlessly looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the internet better access to the knowledgeable technical staff here at ARRL HQ. Questions relating to Amateur Radio and related technical topics are welcome. To use this service, send a normal e-mail message to tis@arrl.org with your question spelled out in plain english. For best service, be as specific as possible and keep your line length in messages to a maximum of 80 characters. Due to personnel limitations, priority will be given to questions from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the file prospect (send prospect) for information on how to easily get started in this fun hobby.

FILENAME SIZE DESCRIPTION
--- --- ---
PROSPECT.TXT 2k How to get your Amateur Radio license
EXAMS.TXT 52k Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k Examinations - what to bring - requirements
USERS.TXT 6k List of HQ Email addresses
ARRLCAT.TXT 39k Catalog of ARRL Publications - commercial content
JOIN.TXT 2k How become an ARRL member
SERVICES.TXT 5k A condensed list of ARRL membership services
TOUR.TXT 28k An electronic tour of ARRL Headquarters
DIR.HQ 5k Visiting ARRL HQ - directions and tour information
HFBANDS 7k Breakdown of users of HF spectrum
Q-SIGS 1k ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k W1AW schedule of transmissions and operation
PRODREV1.TXT 12k Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k QST Bibliographies List
RFIGEN.TXT 37k How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k Lots and lots of ham/electronic company addresses
KITS.TXT 6k List of companies that sell kits
BBS.TXT 12k List of ham-radio land-line bulletin boards
FAQ1.TXT 25k Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k Amateur Radio Advanced and Technical Questions

American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

2530. TS-450S CB Operating

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 03:43:49 UTC
From: hsyim@hppfs01.kaeri.re.kr
Message-ID: <348rdl$lh1@hpdol.kaeri.re.kr>
Source record: 116369

[No readable article body recovered]

2531. Miller coil form; HEP-2 xsistor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 03:58:45 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CvJCDy.A04@news.Hawaii.Edu>
Source record: 116370

I'm building a 25 MHz VFO from an older book; the author calls for all three inductors to be wound on a J.W. Miller #4500 coil form; Does anyone know the outside diameter of this form so I can find a substitute?

He only states the number of turns of #30 wire (close wound) without giving any other details (not even the inductances are given!)

Oh, while I'm here, can someone provide a `modern' replacement for an HEP-2 (= GE-1) transistor? The VFO uses three of these older pups.

Thanks so much.

Jeff NH6IL (ex WA6QIJ)

2532. 1750 meter station list???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 14:51:05 UTC
From: robb873302@aol.com
Message-ID: <34a2gp$g6f@search01.news.aol.com>
Source record: 116372

Does anyone have a list of 1750 meter stations? I've seen bits and pieces around but nothing comprehensive.

Thanks - Rob, N1NTE (email - RobB873302@aol.com)

2533. WTD: Xtal oscillator for 6M AM rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 14:59:04 UTC
From: robb873302@aol.com
Message-ID: <34a2vo$g95@search01.news.aol.com>
Source record: 116373

Does anyone know of a decent (and simple!) xtal oscillator circuit/kit for my old Gonset and Layfayette rigs. I'd like to get them xtal controlled on receive too.

- Rob, N1NTE (RobB873302@aol.com)

2534. CB to 6M conversions???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 15:01:03 UTC
From: robb873302@aol.com
Message-ID: <34a33f$ga9@search01.news.aol.com>
Source record: 116374

I picked up a bunch of Realistic TR-47 SSB 23 channel CBs. I'd like to get them up on 6M and had seen an article on how to do it once. Anyone else seen this?

Thanks - Rob, N1NTE (email - RobB873302@aol.com)

2535. Re: Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 19:04:31 UTC
From: acooney@netcom.com
Message-ID: <acooneyCvKIBK.KHs@netcom.com>
Source record: 116375

Ranson J. Pelt (pelt@vt.edu) wrote:
: Does anyone know of software to develop circuit boards designed for the Mac???

: --
: Ranson Pelt
: pelt@vt.edu
: nz4i

Since this may be of interest to others, I'll post it. There are at least two I know of that are still producing for the Mac:

McCAD Series
By: VAMP
6753 Selma Ave.
Los Angeles, CA 90028
(213) 466-5533
They've been around for many years, and their stuff runs from $400 for bare-bones, to about $4,000 for full-blown rip and retry autorouting.

CAD/CAM Professional
By: Douglas Electronics
2777 Alvarado St.
San Leandro, CA 94577
(510) 483-8770
They're primarily a pc board house, and wrote this software to help drum up business. Their software comes with a utility that'll dial their pcb fab and get you an immediate quote on the board you've just drawn up. Click a button, and it'll download the order -- and they'll ship to you when it's done. Schematic capture and route software is around $3,500.

In addition, there's a company in Canada that produces a pretty comprehensive schematic capture and digital simulation package for the Mac, called DesignWorks. I've used it for years with pretty fair results.

DesignWorks
By: Capilano Computing
406-960 Quayside Drive
New Westminster, B.C., Canada, V3M 6G2
(604) 522-6200
Their software will generate netlists for all the popular pcb layout applications, including those for the PC. I believe it's around $500 - $1,000. Since one package they used to work with was recently discontinued, they may be keen on fitting you with whatever else is out there (ie., they'd know what was available).

Call them...

And now, I've got to get my $0.02 worth in. I'm an electrical engineer, and have tried (for years) to hang on as one of a mere handful who use Macs for engineering. I bought Protel's AutoTrax pcb route application with DesignWorks schematic capture a couple of years ago, and Protel has since discontinued both sales and support of their Mac software. They've decided to pursue the Windoze market. In addition, I bought Claris CAD for the Mac, and it's since been discontinued. The writing on the wall, folks, is that Apple isn't subsidizing or pushing the Mac as an engineering machine, and engineering software companies are walking away from the Mac. Apple was to pump money into Autodesk's AutoCAD for the Mac platform, and word is they backed out. In the mean time, big bucks are being dumped on the multimedia and graphics software firms. Don't be fooled (as I was): Apple has apparently no intentions of pursuing the engineering market. Buyers of engineering software beware. I spent around $3,000 for pcb software that won't run under system 7, and has some fatal bugs that won't ever be fixed. No amount of money will buy me an upgrade. How much will you spend?

Alan

in a thousand of us who

2536. 10 meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 23:06:11 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <34avh3$3dpt@yuma.ACNS.ColoState.EDU>
Source record: 116376

I have a ten meter amplifier, not sure what brand but it uses 1 2sc2290 and 4 2sc2879 finals. The 2sc2290 drives the other four. My question is if the driver final (1 2sc2290) was going bad would it cause the amplifier to throw out of frequincy??? My swr will sometimes be good about 1.4 and then will go to about 3 and the amp will heat up very rapidly. Just a week ago it was working fine with a low swr. Any advice would be greatly appreciated!!
Thanks Robert

2537. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-03 23:54:20 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <778636460snz@arkas.demon.co.uk>
Source record: 116380

In article <1994Sep2.021107.12466@egreen.wednet.edu>
jmollan@egreen.iclnet.org "John Mollan - Harm" writes:

[snip]
> Allies retaliated by turning their radar off and listening for the
> oscillators in the U-boats' receivers. Apparently this worked well
> enough for the practice to be used during the rest of the war.
[snip]
> I would be interested any other interesting stories along the same line.

Back home I once had a brief look through Peter Wright's "Spycatcher" detailing the author's experiences with MI5. (Can't read it here - it's banned :-))

He tells of using the same method to detect receivers in Russian embassies, and also to locate the presence of Russian "illegals" in Britain. Initially they drove around the suspect areas in specially-fitted out vans. Then they fitted an aircraft with the necessary gear, and flew around at night listening for LO's!

Apparently they upset the CIA something fierce when they presented a variant of the system to them - it appeared that MI5 had kept the technology from the CIA for a number of years.

73's

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2538. GMSR radio to 70cm?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 17:38:09 UTC
From: lakki@krksun.krk.fi
Message-ID: <1994Sep4.173809.4376@krk.fi>
Source record: 116377

Hello!

I wonder have anyone tried to modify a GMRS - handie talkie to 70cm?

Are the radios for GMRS crystal controlled or what?

The price rate, abt $100 seems to be a right rate for a 1ch 70cm radio,
to monitor and operate a local repeater.

Please e-mail if you know anything!

/Erik

--
E R I K F I N S K A S OH2LAK
----------------------------------- TELE: Jo puoli miljoonaa
InterNet: Lakki@krk.fi vihaista NMT-GSM soittelijaa
Lakki@muncca.fi Radiolinja on paljon huonompi
Amateur Packet: OH2LAK@OH2RBJ.FIN.EU kuin me.

Puh.k.90-803 8404 a.940-500 6800 RL: Tele on paljon meit{ huonompi.
t.90-693 1107 a.950-555 0551 Me ollaan ehdottomasti parempi.

2539. Re: Design of Helical Resonator Filter for VHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 17:39:39 UTC
From: zlau@arrl.org
Message-ID: <1994Sep4.173939.11087@arrl.org>
Source record: 116378

John J. Ernandez Plainsboro NJ (jernandez@pbs.org) wrote:

: Has anyone had luck building a helical resonator filter at VHF? I have the
: design equations, but it appears that the design may be to unforgiving for
: simple construction. My requirements are 160 MHz center frequency with a 2
: MHz 3 dB BW.The stopband slope should have frequencies at 158 MHz down >50
: dB. Has anyone had luck designing and building similar filters?

There are a set of bandpass filter designs for the Amateur VHF Bands in the last (1994) Eastern States VHF conference proceedings, which ought to be available from the ARRL Publication Sales Deparment. One is a 222 MHz 1 MHz wide filter, but this filter has only 2 sections. You need at least 5 sections to meet your requirement. There is a techique by Dishal outlined in Zverev's filter book for tuning these up without a sweep setup.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2540. Re: Design of Helical Resonator Filter for VHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 17:47:41 UTC
From: zlau@arrl.org
Message-ID: <1994Sep4.174741.11184@arrl.org>
Source record: 116379

Zack Lau (KH6CP) (zlau@arrl.org) wrote:
: John J. Ernandez Plainsboro NJ (jernandez@pbs.org) wrote:

: : Has anyone had luck building a helical resonator filter at VHF? I have the
: : design equations, but it appears that the design may be to unforgiving for
: : simple construction. My requirements are 160 MHz center frequency with a 2
: : MHz 3 dB BW.The stopband slope should have frequencies at 158 MHz down >50
: : dB. Has anyone had luck designing and building similar filters?

: There are a set of bandpass filter designs for the Amateur VHF Bands in the
: last (1994) Eastern States VHF conference proceedings, which ought to be
: available from the ARRL Publication Sales Deparment. One is a 222 MHz 1 MHz
: wide filter, but this filter has only 2 sections. You need at least 5
: sections to meet your requirement. There is a techique by Dishal outlined

Oops, that should be 10 sections. You might break it up into two 5 section
filters.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2541. Re: DSP on a SoundBlaster (was: FFTMORSE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 17:54:42 UTC
From: david@djwhome.demon.co.uk
Message-ID: <778726482snx@djwhome.demon.co.uk>
Source record: 116381

In article <33vjnq$6i7@chnews.intel.com> Cecil_A_Moore@ccm.ch.intel.com writes:
>
>Hi Doug, I don't think David means the PC can't do the filtering. I have

No. The problem is that the 8 bit SB cards cannot do simultaneous input
and output. By not being able to do real time processing, I meant that
you could read a signal in, process it and output it, but couldn't
output it as you were reading in.
--
David Woolley, London, England david@djwhome.demon.co.uk
Demon supplies me with IP/SMTP/NNTP. *.demon hosts are independently managed.

2542. Re: 10 meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 19:19:07 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <778706347snz@arkas.demon.co.uk>
Source record: 116382

In article <34avh3$3dpt@yuma.ACNS.ColoState.EDU>
greendot@lamar.ColoState.EDU "Robert Taylor" writes:

> I have a ten meter amplifier, not sure what brand but it uses 1 2sc2290 and 4
> 2sc2879 finals. The 2sc2290 drives the other four. My question is if the
> driver final (1 2sc2290) was going bad would it cause the amplifier to throw
> out of frequincy???

The driver by itself is probably not a problem, as it is a single device stage. Sounds like the other units are in parallel, so one of those dropping out would probably result in reduced output. Dry joints in tuning tanks, etc., will cause problems, but again, reduced / no output will most likely result.

I'd try the suggestion below first ... it's easiest to eliminate, and could save a lot of head-scratching:

> My swr will sometimes be good about 1.4 and then will go
> to about 3 and the amp will heat up very rapidly.

I'm not surprised! :-)

> Just a week ago it was
> working fine with a low swr. Any advice would be greatly appreciated!!
> Thanks Robert

Sure it's not an intermittent problem with your antenna system? By "antenna system" I mean *everything* from the antenna port on your SWR meter through to (and including) the antenna.

I had something like this with a Swan 500 C once - eventually I pulled down the antenna (a dipole) and found a dry joint in my homebrew balun. One touch with the soldering iron solved the problem. :)

A suggestion: Next time you have the problem, QRT, disconnect the antenna cable from the SWR meter, and put a dummy load there instead. Transmit, and see what you get for VSWR & output power. I'd swap back and forth a few times between antenna and dummy load just to check that disturbing the antenna cable connector doesn't "fix" the problem.

The results of this test will at least isolate the problem to one of two parts in your set-up.

Feel free to email me at michael@arkas.demon.co.uk if you have questions, etc.

73's

--
Mike Dower

G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2543. Re: Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-04 21:45:51 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <778715151snz@arkas.demon.co.uk>
Source record: 116383

In article <acooneyCvKIBK.KHs@netcom.com>
acooney@netcom.com "Alan Cooney" writes:

[snip]
> And now, I've got to get my $0.02 worth in. I'm an electrical engineer,
^^^^^^^^^^^^^^^^^^^
Likewise

> and have tried (for years) to hang on as one of a mere handful who use Macs
> for engineering.
[snip]

I'm not a great user of Mac's, but one question that I've never thought to ask: do Mac's have a feature that equals the processing power of an intel floating point processor? I ask this because I'm wondering if a Mac could do "hack" work for low speed control systems, DSP, phased array antenna control, etc.

I've always used ibm clones for eng. work - I currently have a 486dx2/66 with 8 MB RAM purely as a "home-use" eng. machine to run antenna modelling software, etc. This involves much manipulation of large arrays containing double-precision floating-point numbers, and hence takes time. More RAM will be added (up to 32 MB) as money allows. :)

Regards,

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2544. RFI Free PC Computer Cabinet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 05:02:56 UTC
From: herbr@netcom.com
Message-ID: <herbrCvn4ox.2z@netcom.com>
Source record: 116384

Subject: RFI Free PC Computer Cabinet?
Newsgroups: rec.radio.amateur.equipment
Organization: NETCOM On-line Communication Services (408 261-4700 guest)
Summary:
Keywords:

Over th e past several years, I have tried several different PC compatible computers in the shack in an attempt to use with my HF Station. It seems no matter with PC I have tried, and having tried toroid chookes, ac filters, etc. my PC (now a 486 /66) still QRM's the heck out of the ham hams with birdies and other annoying noise.

I know my PC is not a CLass B machine, just a clone. But over the years, I have had several clones, real IBM's, Compaqs, and AST's all with basically the same result.

Does anyone out there know of a manufacturer of a PC tower or desktop cabinet that has excellent RFI suppression and shielding? If so, would be very interested in finding this out.

Short of spending magabuck for a new class b machine, is there any other solution? My pca nd my hf station are totally useless together. What does all you guys do?

Thanks.

--
herbr@netcom.com

2545. Amplifier with GS35 Triode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 10:07:03 UTC
From: M.Willis@ee.surrey.ac.uk
Message-ID: <1994Sep5.100703.19027@ee.surrey.ac.uk>
Source record: 116393

I am looking for a design using the Russion gs35 Triode on 432 MHz. This valve has an anode dissipation of 1500W and is usable up to 1 GHz. It seems ideal for QRO work at 70cms. What I do not have is a tried and tested design for it. I can make a first attempt using a modification of an exisiting design for another valve but, I am sure a lot of optimisation would be necessary. As I have only got two valves, I do not want to do any destructive testing. I have some limited valve data, including capacitance and operating parameters, but nothing on cooling requirements or gain and stability expectations.

Mike

2546. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 10:53:51 UTC
From: chrismc@dip.eecs.umich.edu
Message-ID: <34etbv$8pi@zip.eecs.umich.edu>
Source record: 116385

In article <1994Sep2.021107.12466@egreen.wednet.edu>,
John Mollan - Harm <jmollan@egreen.iclnet.org> wrote:
>In article <9407307782.AA778263641@mails.imed.com>,
>Mack Ray <mack@mails.imed.COM> wrote:
>> David Newkirk's post in digest #258 prompted this post. I have first
>> hand experience with the receiver radiation problem he described. I
...
>> This should make it obvious why they do not want you to use a portable
>> FM radio in an aircraft where the LO can easily be in the aircraft
>> band.
...
>> My experience with cheap boom box type radios and small portable
>> radios has been consistent. They make incredibly good transmitters!

>Back in the days of WW II the German U-boat crews would tune receivers to
>Allied radar frequencies to see if there were any planes or ships near. The
>Allies retaliated by turning their radar off and listening for the
>oscillators in the U-boats' receivers. Apparently this worked well
>enough for the practice to be used during the rest of the war.

I recently read a book titled _A_Race_on_the_Edge_of_Time_ which follows
the development and use of radar during WW II. The author relates how
airborne radar units had a significant impact on the Battle of the Atlantic
because surfaced German subs were almost impossible to spot visually at
night. While the radar units of the time were not sufficient to guide a
torpedo/bombing run against the sub, it was sufficient to get the patrol
aircraft in position to use a high-power searchlight.
To counter this, the Germans developed a RWR (radar warning receiver)
and could get under water in less than a minute. To counter this, the
Allies changed bands, moving to a higher frequency. This allowed them to
start catching subs on the surface again. The Allies successfully spread
the story of a new piece of equipment that detected the RWR local oscillator.
Since submariners are a paranoid lot (their only real defense is the ability
to hide), the commander for the Nazi sub fleet immediately had use of the
RWRs halted. Since the super-hi-tech solution appealed to the Germans, they
believed the local oscillators were at fault. (This deception was aided by
a patrol aircraft crewmember who was captured by the Germans.)

Don't know if this story is more or less accurate than yours, but it is
a different twist.
Chris McCormack / n0oqt
chrismc@eecs.umich.edu

2547. Re: Design of Helical Resonator Filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 14:53:25 UTC
From: 00tlzivney@bsuvc.bsu.edu
Message-ID: <1994Sep5.095325.33668@bsuvc.bsu.edu>
Source record: 116386

See QST June 1976 for article by Jim Fisk, W1HR, on helical filter design.

Terry Zivney, N4TZ

2548. WANTED:radio plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 16:13:15 UTC
From: starin@netcom.com
Message-ID: <starinCvnzq4.Fp7@netcom.com>
Source record: 116387

I am looking for plans to do the following:

1) Convert a standard car radio so it can receive transmissions in the 460Mhz range of the radio spectrum, and;

2) Construction plans to build a miniature receiver capable of receiving transmissions in the smae range of the radio spectrum. I understand for this I may need to use crystals, and that's okay.

Any help or pointers on where I can find such information would be greatly apprecaited.

Thanks.

Jeffrey
{New York}
--
Jeffrey
{New York}

2549. Re: 10 meter amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 16:56:05 UTC
From: n921w1@pnet16.navy.mil
Message-ID: <Cvo1pH.JJF@nctams1.uucp>
Source record: 116388

Robert: You may try checking the bias voltage after the amp heats up. Sounds like it changes after heating up the transistors, also hows the thermo prection ckt?
Chuck AH6IN Aloha

INET: n921w1@pnet16.navy.mil

2550. Re: Pocket SW Receiver Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 21:07:14 UTC
From: joe@netcom.com
Message-ID: <joeCvoDC3.HLC@netcom.com>
Source record: 116389

Another super trick to get AM from an FM chip is to use an IF amp
(MC1350 or equiv) whose input is connected before the limiter and
SUM the output at the discrimiter input (remove the disc coil).

Voila! Synchronous AM Detection!!

Works with many FM chips...

--Joe Jesson

--

Joseph Jesson joe@netcom.com Day (312) 856-3645 Eve (708) 356-6817
21414 W. Honey Lane, Lake Villa, IL, 60046

2551. Re: Portable EME Station -- Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-05 22:57:36 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <778805856snz@arkas.demon.co.uk>
Source record: 116390

In article <341obn$1sqk@info2.rus.uni-stuttgart.de>
deap1032@servus11.rus.uni-stuttgart.de "Bruegemann" writes:

[snip]
> There is an excellent publication "technical notes for EME comunication"
> by the Crawford Hill VHF Club.
> Adress:Dick Turrin
> P.O. Box 65
> Colts Neck, New Jersey
> 07722

I'd like to get a copy of this, but I have no idea of availability, price, size
of SASE to send, shipping / mailing costs, etc.

Can anyone assist? An email address, daytime phone no., or an "anytime" fax
no., for Dick Turrin, or anyone else in the group, would be great.

TIA & 73's

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2552. Re: Unitrode 1N5767 PIN diode + TR switch design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 03:00:06 UTC
From: studebaker@aol.com
Message-ID: <34glvm$6r3@search01.news.aol.com>
Source record: 116391

In article <1994Sep2.224445.27312@integrity.uucp>, bruces@mpd.tandem.com (Bruce Sawtelle) writes:

>I'm planning to replace the realy on the Ramsey 2M amp (kit) with a
> PIN diode circuit and am looking for some info. In the ARRL Handbook,
> there's an HF TR switch using a Unitrode 1N5767 that's supposed to
> handle 100W according to the text.

Why cross the Unitrode part? Microsemi bought that Unitrode division and I beleive they still make the part. O&M Sales is the Texas Rep for Microsemi.

2553. MIC Cable source???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 06:51:15 UTC
From: x90galbrait1@wmich.edu
Message-ID: <1994Sep6.025115.21129@wmichgw>
Source record: 116392

Greetings,
Anyone know where I could purchase 50 feet or less of Mic cable-2 conductor + ground/shield?
Mouser and Digikey only ship in 100 or 500' lengths.
Tks+73,
Chris, KA8WFC

2554. QRP SSB Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 13:56:58 UTC
From: gdian22@rfc.comm.harris.com
Message-ID: <Cvpo2z.Dqv@news.ess.harris.com>
Source record: 116394

Hello All -

A few weeks ago I was looking for 455khz xtals for a project; turned out I really needed 455khz resonators. Anyway, the project I was building was a 80m SSB transceiver. The plans were from Derry VE7QK, an active member of the Vancouver British Columbia QRP Club. It is a neat circuit that fits on a board just smaller than a QSL card. It uses NE602s for mixers, has a 455khz IF, and puts out a whopping 1/2watt.

Brad (wb8ygg/2) and I (n2jgu) checked into the QRP net at 3.756 last night with these rigs. It is amazing what 1/2w will do! The article describing this rig is in the September 94 issue of the NorCal QRPp newsletter (that's the journal of the Northern California QRP Club).

If you've been waiting for a voice rig to build, this is a fairly simple one to get on the air. It would not be a good project for a novice builder to attempt. Cost is about $50.

73 for now.
- Gary N2JGU

p.s. To subscribe to the QRPp, send $5 to Jim Cates (wa6ger), 3241 Eastwood Rd., Sacremento CA 95821. BTW, it's a 1/4'ly pub.
[I'm not paid for this info, I'm just a happy, informed QRPer!]

2555. Re: MIC Cable source???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 15:31:09 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.778865469@aries>
Source record: 116395

x90galbrait1@wmich.edu writes:

>Greetings,
>Anyone know where I could purchase 50 feet or less of Mic cable-2 conductor +
>ground/shield?
>Mouser and Digikey only ship in 100 or 500' lengths.
>Tks+73,
>Chris, KA8WFC

Radio Shack?

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

2556. Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 15:48:59 UTC
From: dkelly@nebula.tbe.COM
Message-ID: <9409061548.AA19565@nebula.tbe.com>
Source record: 116396

> McCAD Series
> By: VAMP
> 6753 Selma Ave.
> Los Angeles, CA 90028
> (213) 466-5533
> They've been around for many years, and their stuff runs from $400 for
> bare-bones, to about $4,000 for full-blown rip and retry autorouting.
(deleted)
> pursuing the engineering market. Buyers of engineering software
> beware. I spent around $3,000 for pcb software that won't run
> under system 7, and has some fatal bugs that won't ever be fixed.
> No amount of money will buy me an upgrade. How much will you
> spend?
>
> Alan

I'm a current user of Vamp's McCAD series. Their software works pretty well under System 7.1, and will even run on a 1M Mac Plus.

Alan's advise to buyers of engineering software applies to software for ANY platform. In the workstation world it is common for developers to demand

funding from hardware makers to port and support that platform. I'm not sorry that Apple is not paying cash bribes to engineering software developers but I too would like to see a better selection of engineering software for the Macintosh.

I'll really miss ClarisCAD. It was/is a great program. Similar enough to

MacDraw to be really easy to use, yet with the proper enhancements to produce the accuracy needed of a CAD drawing program. Its a shame it voilated Ashlar's patents. Ashlar Vellum is a better CAD program, but not as easy to get started with as ClarisCAD.

Some say the engineering Mac software market is too small, well, I've done my part by purchasing $14,000 of Mac software for engineering use in the last several years.

David Kelly, N4HHE
dkelly@nebula.tbe.com

2557. Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 16:05:59 UTC
From: dkelly@nebula.tbe.COM
Message-ID: <9409061605.AA19638@nebula.tbe.com>
Source record: 116397

> I'm not a great user of Mac's, but one question that I've never thought to
ask:
> do Mac's have a feature that equals the processing power of an intel floating

> point processor? I ask this because I'm wondering if a Mac could do "hack"
work
> for low speed control systems, DSP, phased array antenna control, etc.

The MC68882 is either built-in or optional on all 68020 and 68030 Macintoshs. Moto data sheets will prove that its faster than the 80387, Intel datasheets will prove the opposite. One slick feature of the 68882 is that 68k CPU's support up to 16 '882's at once. Pretty usefull for parallel processing, or multiple users (OS wouldn't have to swap FPU registers on context switch).

As with the 486, the 68040 in Macintosh Quadras, contains a built-in FPU. Some will gripe that some hardware functions of the '882 are performed in software on the '040, yet the '040 is still 5 or 10 times faster. Watch out for 68EC040's or 68LC040's, one or both of these do not include FPU and/or MMU. I think the Quadra 605 uses one.

The AV series of Macintoshs include on-board DSP and real time video. The AV PowerMac's don't include DSP as Apple claims the PowerPC chip is faster than the DSP was.

David Kelly, N4HHE
dkelly@nebula.tbe.com

2558. Re: Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 16:38:19 UTC
From: jfw@ksr.com
Message-ID: <34i5tr$6mk@hopscotch.ksr.com>
Source record: 116398

pelt@vt.edu (Ranson J. Pelt) writes:
>Does anyone know of software to develop circuit boards designed for the Mac???

How complicated a circuit board do you need to design? For a typical ham-radio homebrew design, you may be able to get by with something as simple as MacDraw. For a multi-layer several-dozen digital IC design, then you'll want something a bit more powerful :-). (For which I see that others have posted recommendations.)

2559. Re: Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 16:51:15 UTC
From: jfw@ksr.com
Message-ID: <34i6m3$6qf@hopscotch.ksr.com>
Source record: 116399

Michael@arkas.demon.co.uk (Michael J Dower) writes:
>I'm not a great user of Mac's, but one question that I've never thought to
>ask:
>do Mac's have a feature that equals the processing power of an intel floating
>point processor?

No, unfortunately you cannot slow down the Motorola floating point unit that
much. :-)

Some Macs, even many Macs, have either 68882 FPU chips ('030, or 'LC040,
based Macs) or integral FPU engines (full '040 or PPC Macs); when a 68K
family CPU is being run at a speed that gives it equivalent performance
to a selected Intel processor, the floating point speed is generally well
in excess of the Intel processor, chiefly because Intel just hasn't focused
very hard on FPU speed (since it doesn't help speed up important benchmarks
like DOOM ;-).

There are a couple of system-level issues; many Mac applications do not use
the floating point unit because the Mac _architecture_ doesn't guarantee the
presence of one (much like the Intel 486SX offering). Some of these
applications include inline code to perform floating point arithmetic with
integer operations, and (needless to say) these applications are slow.
Other applications use Apple's "SANE" calls, which trap into the Toolbox
and either use built-in integer code or the FPU if it is present); these
applications are reasonably fast, but that's a lot of overhead compared
with raw FPU instructions. Some applications use raw FPU instructions,
and benefit most from an FPU (these apps are usually shipped both with
FPU versions and non-FPU versions).

>I've always used ibm clones for eng. work - I currently have a 486dx2/66
>with 8MB RAM purely as a "home-use" eng. machine to run antenna modelling
>software, etc. This involves much manipulation of large arrays containing
>double-precision floating-point numbers, and hence takes time. More RAM
>will be added (up to 32 MB) as money allows. :)

PowerPC Macs are reasonably cheap (cheaper than some Pentium systems), they
are engineered to take good advantage of the PPC processor (unlike the
cheap Pentium systems that are a Pentium chip starving on a 486/33
motherboard), you can be DARNED sure the system will work when you get it
home, and the PowerPC excels at floating point work. (You'll probably need
to buy a developer's kit, though, to port the antenna modelling software.
But, hey, NEC2 sources are cheap.)

2560. Stainless Steel Hardware 18-8 vs 316

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 19:03:34 UTC
From: 00tlzivney@bsuvc.bsu.edu
Message-ID: <1994Sep6.140334.33747@leo.bsuvc.bsu.edu>
Source record: 116400

Can anyone tell me what the difference is between
18-8 Stainless and 316 Stainless? The fastener supplier caRRies two
types of stainless bolts - which is stronger? Any other differences?

Thanks.

Terry Zivney, N4TZ
00tlzivney@bsuvc.bsu.edu

2561. Re: Ramsey 2m Amplifier Brick kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-06 20:30:14 UTC
From: genew@teleport.com
Message-ID: <34ijgm$3ak@sandra.teleport.com>
Source record: 116401

pouelle@uoft02.utoledo.edu wrote:
: In article <Cv5E0I.6xL@fore.com>, ed@fore.com (Ed Bathgate) writes:
: >
: >I am thinking of getting the Ramsey 2M Brick amp kit and the matching
: >tx relay.
: >
: >Any experiences / opinions with this unit.
: >
: > 73
: >
: > Ed N3SDO
: > Ed@fore.com
: Ed,
: I recently built the Ramsey 2m PA-1 and relay. The amp seems to work
: fine. I run mine from my car (direct to battery) and use my HT to drive it.
: My HT puts out about 0.5 watts on low power, and this gets amplified to 10
: watts at the output of the amp. The relay circuit is kind of touchy with
: this low of drive - they spec a low drive mod, but I didn't do it. On
: high power my HT puts out about 5 watts that is amplified to close to 40
: watts. I don't have lab spec readings on the power out - just my cheap
: RS 2/440 SWR/POWER meter.

: My biggest complaint - there is no provision for mounting the &*^%*&
: circuit board!! I suppose this is to allow "a wide variety of mounting
: options" but I see it as a pain!

: Just my $ 0.05 (that's $ 0.02 + $ 0.03 for taxes).

: Patrick KB8PYM
: pouelle@uoft02.utoledo.edu

I opted to buy the completed unit. I added up the prices of the amp kit, the relay kit, heat sink, and additional assorted hardware and came up with a cost just short of the finished and tested unit.

BTW, if you buy the complete unit, you will find that Ramsey does not use a relay at all! There is a 1/4 (?) wave piece of coax feeding the received signal back around the amp. At the opposite end of the coax from the power amp output is a PIN diode which conducts when the amp outputs. This shorts the end of the coax, presenting an apparent open circuit at the amp end of the coax. Instant switching, works fine on packet.

The only downside to this amp is due to it's being a single transitor output. It is therefore biased ON in the middle of it's range, (let's see, is that called CLASS A ?). The result is that the amp draws 4+ amps at all times. For this reason I don't use it mobile. I occasionally forget and

leave my mobile amp on, I use one which only draws significant current
when I talk, thus not running the darn battery down.

73's
Gene
KB7WIP

2562. Re: CB to 6M conversions???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 01:13:00 UTC
From: Stanley.Outlaw@capefear.com
Message-ID: <151.26.59@capefear.com>
Source record: 116402

R> Organization: America Online, Inc. (1-800-827-6364)

R> I picked up a bunch of Realistic TR-47 SSB 23 channel CBs. I'd like to
R> get them up on 6M and had seen an article on how to do it once. Anyone
R> else seen this?

R> Thanks - Rob, N1NTE (email - RobB873302@aol.com)
I would be interested in what success you have getting the CB's on 6 meters.
later, Stanley
STANLEY.OUTLAW@CAPEFEAR.COM
* Evaluation copy of Silver Xpress. Day # 21
--- via Silver Xpress V4.01 [NR]

2563. Re: Ramsey 10 Meter FM Receiver Kit Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 05:18:58 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <34jig2$3sq@abyss.West.Sun.COM>
Source record: 116403

In article ogc@dolphin.phoenix.net, marwynn@phoenix.phoenix.net () writes:
>I have built the Ramsey model FR-10 10 meter fm receiver kit. I want to use it
>with a different band width. I am going to use it as a 10 ghz receiver. I understand to change the band width requires repalcing one of the ceramic filters
>with a capacitor. Which filter should be change the 10 20.7 MHZ or the 455 kc
>filter? And what value of cap whould be used? .01 mfd ? I would apprecate your
>help in this mater. 73's

The narrower ceramic filter is the 455KHz filter. The 10.7MHz filter
is like 300KHz wide.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Sir, over there.... is that a man?" *

2564. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 06:44:28 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cvqyq4.I5n@cix.compulink.co.uk>
Source record: 116404

Sounds like an interesting book, who's the author and publisher? isbn?

regards

oddjob@cix.compulink.co.uk

2565. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 10:48:07 UTC
From: charlos@rivm.nl
Message-ID: <CvrA07.51y@rivm.nl>
Source record: 116405

John Mollan - Harm (jmollan@egreen.iclnet.org) wrote:
: In article <9407307782.AA778263641@mails.imed.com>,
: Mack Ray <mack@mails.imed.COM> wrote:
: >
: >.....

: Back in the days of WW II the German U-boat crews would tune receivers to
: Allied radar frequencies to see if there were any planes or ships near. The
: Allies retaliated by turning their radar off and listening for the
: oscillators in the U-boats' receivers. Apparently this worked well
: enough for the practice to be used during the rest of the war.
:.....
: 73, John
: AE7P

Actually this was a clever British hoax (so I read, don't where now
but I can look that up)
The British spread the rumor that they could locate German subs by
detection of the receiver oscillator radiation. Apparently this worked
quite well: the Germans investigated this and found that their receivers
did radiate. They then took measures to have all receivers modified.
Net effect was that the Germans waisted a lot of resources for nothing...

Another fine story (but this is getting a bit far away from homebrewing)
was that German subs could detect allied aircraft radar signals with a simple
dipole. The trick was to decrease radar energy as soon as a sub was detected
and to decrease it further as the aircraft approaced the sub. This made
(for a while) the Germans think that the aircraft did not approach the sub
but kept a large distance.

73, Charlos
PA3CKR
charlos@rivm.nl

2566. Re: Stainless Steel Hardware 18-8 vs 316

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 11:46:03 UTC
From: jimn0oct@aol.com
Message-ID: <34k95r$5s5@search01.news.aol.com>
Source record: 116406

In article <1994Sep6.140334.33747@leo.bsuvc.bsu.edu>,
00tlzivney@bsuvc.bsu.edu (Terry L. Zivney) writes:

>Can anyone tell me what the difference is between
>18-8 Stainless and 316 Stainless? The fastener supplier caRRies two
>types of stainless bolts - which is stronger? Any other differences?

Probably won't make much difference. 304 stainless WILL rust, and any
stainless is not truly compatible with copper. Unless you have a high
stress application, I would think either will do.

72, jim n0oct

2567. Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 13:14:31 UTC
From: sol@soleil.serma.cea.fr
Message-ID: <34kebn$1bj@anemone.saclay.cea.fr>
Source record: 116407

Hi everybody

My coax relays are 26 volts models. A long time ago, I saw a circuit able to trigger such relays from a 12 volt source. The only thing I remember is that it was a kind of voltage doubler who supply the relay with 2x12 volt during a short time, and then supply it with 12v.

Does anybody knows this circuit ?

Thanks a lot

73 de F1GOC K

2568. Re: Ham-Homebrew Digest V94 #266

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 13:55:41 UTC
From: Scott.Mickelbank@analog.COM
Message-ID: <9409071354.AA01964@nwd2sun1.analog.com>
Source record: 116408

unsubscribe

2569. Re: Phase Locked Loops

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 15:07:12 UTC
From: jfw@ksr.com
Message-ID: <34kkv0$fk9@hopscotch.ksr.com>
Source record: 116409

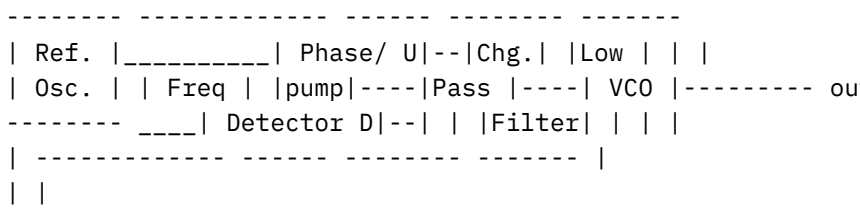
dennis.mcguire@scpcug.com (Dennis Mcguire) writes:
> Can anyone tell me, in relatively simple terms, how a Phase Locked Loop
>circuit works?

A PLL contains four basic building blocks: a reference oscillator, a voltage-controlled oscillator, a phase detector, and a lowpass filter. The goal of a PLL is to make the VCO oscillate at the same frequency as, and in phase with, the reference oscillator. (Note that the reference oscillator is often not part of the PLL circuitry per se; for example, digital data clock recovery schemes, or "automatic frequency control" in your FM or TV receiver.)

There are several types of phase detector; I will describe how a PLL works when using a "phase-frequency detector", the easiest kind to design around but the hardest to understand the internals of (which isn't what you've asked for). A typical phase-frequency detector has two digital outputs, called U and D (for Up and Down), which are both high when everything is stable. If the PFD detects that the reference is at a higher frequency than the VCO, it will pulse the U output low every now and then (the exact pattern depending on the exact correlation between the two input signals); if it detects that the reference frequency is lower than the VCO, it pulses the D output. Additionally, if the two frequencies are the same, but the reference is leading the VCO in phase (turns on first, turns off first, but at the same rate as the VCO), the PFD also pulses the U output low, and if the VCO leads, it pulses D low.

So, we now feed these two outputs into a circuit called a charge pump, which basically adds charge to, or subtracts charge from, a capacitor, according to the control signals; we now have a voltage that increases when U is low, decreases when D is low, and remains constant when both are high.

We pass this voltage through a low-pass filter (to remove the changes that happen at roughly the rate of the oscillator signals) to obtain a smooth "error voltage". This voltage is then fed to the Voltage-Controlled Oscillator to control its frequency (we might need a DC amplifier, depending on the range of output voltages the PFD/charge-pump gives us, and the necessary input range for the VCO).



```
|_____________________________________________________|
```

(Note that the Charge Pump is usually integrated either with the phase detector or with the low-pass filter, depending on the ICs you're using, and that other types of phase detectors don't use a charge pump as such. That's why you see five boxes there when I promised that there were only four major building blocks. :-)

To review how it all works together: assume that the reference and VCO are on different frequencies. The phase detector and lowpass filter causes the control voltage to increase or decrease, as appropriate, to bring the VCO to the right frequency. Once the frequency is right, if the VCO is lagging in phase the voltage is nudged a bit higher to speed it up and bring it into phase lock (note that the voltage will subsquently be nudged lower to fix the frequency!), and vice versa for leading phase. Once the VCO is locked in, it may drift a bit in phase, but will be nudged back by the feedback loop.

So there you have a basic PLL, a voltage-controlled oscillator that follows exactly the frequency and phase of another oscillator.

Why would you want to do that, when you already HAD an oscillator? As I said, one common type of use of PLLs is when the reference oscillator isn't part of the actual circuit; you can use a PLL to track the frequency of an oscillator that is somewhere else, and (especially important) is noisy or has been heavily modulated: you can turn an FM radio signal into a local pure copy of the original carrier by ensuring that the PLL low-pass filter removes all traces of audio signals; thus, the VCO won't keep up with the frequency changes inherent in FM, and instead follows the center frequency of the signal.

Another use of PLLs is in frequency synthesizers: you can make a stable high-frequency oscillator (or, more importantly, stabilize an unstable high- frequency oscillator) by starting with a stable low-frequency oscillator at some sub-multiple of the desired operating frequency (a tenth, a hundredth, or (say) one part in four thousand six hundred twenty three), and inserting a divider between the VCO and the phase detector to divide the VCO frequency down to the range of the reference. If the divider is programmable, you can change the output frequency by changing the division ratio (say, from 4623 to 4624); this is how channelized frequency synthesizers usually work.

Another form of frequency synthesis can give you a continuously variable output frequency: instead of a fixed very-low frequency oscillator, you make a variable frequency oscillator at some easy-to-stabilize frequency (perhaps 3.0 - 4.0 MHz), and instead of a frequency divider, you put a frequency mixer between the VCO and the phase detector; the second input to the frequency mixer would be a high-stability crystal oscillator operating roughly 3MHz away from the desired output frequency. If the crystal oscillator runs at 150MHz and the VFO is at 3 MHz, the VCO could be at either 153 or 147MHz;

tuning the VFO to 4MHz would then lock the VCO at either 154 or 146MHz. You could use a direct mixing scheme to obtain this result (feed the VFO and 150MHz XO into a mixer), but filtering out a 146MHz signal while leaving a 154MHz signal intact (or vice versa) is somewhat difficult (since the percentage difference isn't very high); on the other hand, you can design a VCO that will reach from 146 to 147MHz but *cannot* tune as high as 153MHz, which means the VCO will lock onto the correct frequency and there is no spur to reject.

You can also make frequency synthesizers that combine the two tricks above in almost arbitrary combinations.

2570. Re: Stainless Steel Hardware 18-8 vs 316

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 16:17:12 UTC
From: josemj1@aplmail.jhuapl.edu
Message-ID: <josemj1-0709941217120001@joses-mac.jhuapl.edu>
Source record: 116410

In article <34k95r$5s5@search01.news.aol.com>,
jimn0oct@aol.com (JimN0OCT) wrote:

> In article <1994Sep6.140334.33747@leo.bsuvc.bsu.edu>,
> 00tlzivney@bsuvc.bsu.edu (Terry L. Zivney) writes:
>
> >Can anyone tell me what the difference is between
> >18-8 Stainless and 316 Stainless? The fastener supplier caRRies two
> >types of stainless bolts - which is stronger? Any other differences?
>
> Probably won't make much difference. 304 stainless WILL rust, and any
> stainless is not truly compatible with copper. Unless you have a high
> stress application, I would think either will do.
>
FWIW, I believe 316 SS is very nearly nonmagnetic, but 18-8 is magnetic.

--
Marshall Jose, WA3VPZ
josemj1@aplmail.jhuapl.edu

2571. Re: Stainless Steel Hardware 18-8 vs 316

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 16:53:12 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <Cvrqwp.F0o@freenet.buffalo.edu>
Source record: 116411

In a previous article, 00tlzivney@bsuvc.bsu.edu (Terry L. Zivney) says:
>
>Can anyone tell me what the difference is between
>18-8 Stainless and 316 Stainless? The fastener supplier caRRies two
>types of stainless bolts - which is stronger? Any other differences?
>
>Terry Zivney, N4TZ
>00tlzivney@bsuvc.bsu.edu
>
The designation 18-8 specified only the chromium/nickel content and is,
by todays standards old and outdated. The modern 316 is also 18-8 with
a more detailed specification of the minor elements. There is also a
316L which is made to be more suited to welding. So, for non-critical
applications (antenna hardware) they are the same.

Kurt, n2tte

--

2572. Help! Will this idea work? (telemetry question)?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 17:20:52 UTC
From: LOUXWE96%CS25@cadetmail.usafa.af.mil
Message-ID: <LOUXWE96%CS25.172@cadetmail.usafa.af.mil>
Source record: 116271
Cross-posted to: alt.radio.digital,alt.radio.scanner,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.scanner,rec.radio.shortwave,usafa.cadet.clubs.ham-radio

Hello, I am doing a telemetry project and I am curious if this will work.

We want to transmit a audio fsk digital signal to the ground. Now, on the ground can we just buy a regular 70 cm band receiver and will it spit the same digital audio tone out of the back, and then from there is it possible to use some sort of tone decoder or modem/tnc to then change the tones into a digital output which can then be feed into a computer I/O device.

I am looking for some information about if this design will work, and if so what are some specific products that we can buy and where can I get them.

Any Help Please.
Thanks, Bill

---
* Cadet William E. Loux | "I have never let my *
* P.O. Box 2835 | schooling interfere *
* United States Air Force Academy | with my education." *
* Email=> louxwe96%cs25@cadetmail.usafa.af.mil | -Mark Twain *
--------"All know the way; Few actually walk it." -Bohhidharma----------

2573. Re: Phase Locked Loops

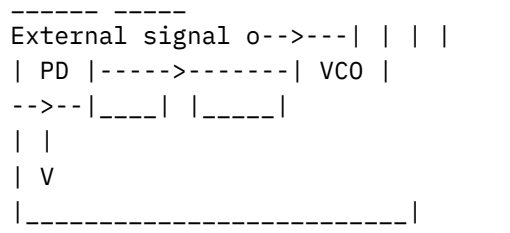
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 17:31:21 UTC
From: matthews@wfu.edu
Message-ID: <34ktd9$sfj@eis.wfunet.wfu.edu>
Source record: 116412

Dennis Mcguire (dennis.mcguire@scpcug.com) wrote:
:
: Can anyone tell me, in relatively simple terms, how a Phase Locked Loop
: circuit works?
: --- FreeMail 1.09
: * Origin: Tim's BBS * Erie, PA * 814-825-1731 * (1:2601/566)

A PLL reminds me of an op amp with negative feedback, but with
frequency (or more accurately phase) being the amplified, fed back
quantity, instead of voltage.

A PLL has at least two sections: a phase detector (PD) and a voltage
controlled oscillator (VCO). A phase detector has two inputs and one
output. The output of the PD is a voltage proportional to the phase
difference of the two inputs. The output of the PD goes to the input
of the VCO, controlling the VCO's frequency.

The output of the VCO is then fed back to one of the two inputs of the
PD, providing negative feedback.

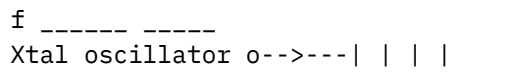


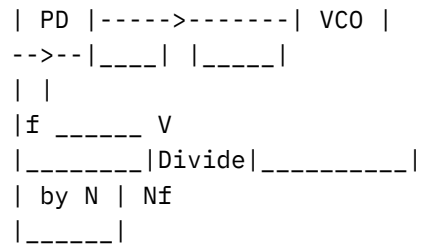
The PD adjusts its output, and therefore the frequency of the VCO,
to maintain a zero phase difference between its two inputs. Therefore,
the VCO output is at exactly the same frequency as the external input.

Applications:

1. FM detector. If the external signal is FM, the VCO output will be
an exact replica, and therefore the same FM signal. What input to the
VCO would make it give such an FM signal? The desired audio signal
that was used to generate the original FM signal! So if you tap off
the signal between the PD and the VCO, that is the audio signal that
was encoded on the external FM signal.

2. Frequency synthesizer. The external input signal is now the
output of a quartz crystal oscillator, and a divide-by-n circuit is
put between the VCO output and the PD:






```
-------| VCO |
-->--|____| |_____|
| |
|f ______ V
|________|Divide|__________|
| by N | Nf
|______|
```

Once again the PD adjusts the VCO so that the PD's bottom input matches the top input in phase and frequency. Since the bottom input is coming out of the divide-by-N, the input to the divide-by-N (the VCO output) must be at N times higher frequency. By varying N, you very the VCO frequency in increments of f, the xtal oscillator frequency.

Thus you have an digitally adjustable frequency source as accurate and stable as the quartz xtal oscillator.

--

Rick Matthews matthews@wfu.edu Ham radio:
Wake Forest University 910-759-5340 (Voice) WA4GSP
Winston-Salem, NC 27109-7507 910-759-6142 (FAX)

2574. Lost Address- Mica Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 18:55:06 UTC
From: ells22@aol.com
Message-ID: <34l2aa$c9d@search01.news.aol.com>
Source record: 116413

Ray Muschlewski, I have lost your address, phone number, and have the
check for the caps ready to send. Why do I do these things!!! I blew you
off the computer by accident and never had written down the particulars.
\
Hope you see this.!!
\\
Russ, WA6CWV, Boise

2575. xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 19:18:54 UTC
From: dshalita@rogue.com
Message-ID: <1994Sep7.191854.15967@rogue.com>
Source record: 116414

>I need to build a crystal filter for a receiver that I am designing
>but I can't seem to find any information exactly on how to do it.
>I need a IF frequency of around 9 to 12 mhz and a bandwidth of about
>2400 for SSB. This will be for 10 meters. What are the formulas for
>this? I am hoping to build them for other frequencies also so a
>fair amount of detail would be great! Thanks and 73!

#AL N1AL replies:
#To do a paper design, you need to know the parameters of the crystals,
#namely the series-resonant frequency, motional inductance or capacitance,
#shunt capacitance and (possible) motional resistance. The design is
#not trivial.

#An easier method is trial and error. Start with a signal crystal:

--+---crystal---trimmer_capacitor---+---
| |
trimmer trimmer
capacitor cpacitor
| |
ground ground

#Tune the series cap for the desired center frequency and the shunt
#capacitors for a little wider than the desired bandwidth (and
#minimum insertion loss.) Now build another identical section.
#Then connect the two sections in series. (You only need
#one shunt trimmer capacitor, not two, where the two sections meet.)
#adjust the center section for proper coupling. If the cap is
#too small, you are over-coupled which gives a double-hump response.
#If the cap is too large, you are under-coupled which causes
#excessive insertion loss.

#Then build another two-section filter and add it in series with
#the other to get a 4-crystal filter. Again adjust the common
#shunt cap for proper coupleing. I have found that 4 crystals
#give a reassonable shape factor and excellent ultimate rejection
#if proper shielding and grounding techniques are used.
#
#Of course, you need some kind of sweep oscillator to make this
#method practical. Perhaps you can borrow someone's Heathkit
#Scanalyzer if real test equipment is not available.
#
#AL N1AL

I also need to build xtal filters for a NE-602 project and this method
looks attractive. Need following filters:

10.7 mhz 55 khz bandwidth
10.7 mhz 15 khz bandwidth

Can I use cheap Microprocessor xtals for this 10.7 mhz task?

Can I make a xtal filter "as wide as" 55khz or 15khz with this technique?

How can I determine input and output impedance requirements
for the xtal filters produced by this method?

A second related question about 10.7 mhz filters.

The circuit application is a NE-602 used as a mixer driving a chain of
ceramic filts into a CA-3089 FM IF driving an LM380 audio amp.

My question concerns the ceramic filter(s) feeding the CA-3089.

1st ckt uses two 10.7mhz 230khz ceramic filters between NE-602 and CA-3089.
2nd similar ckt uses three 10.7 mhz 230 khz filters.

How is bandwidth performance different with 3 identical bandwidth ceramic
10.7 mhz filters in series versus having 2 in series? Does it impact
insertion loss? All filters seem matched at 330 ohms in and out.

Thanks for any help

Dave, w6mik

--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

2576. need 100 MHz TTL clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 19:38:38 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <34l4ru$icc@bmerha64.bnr.ca>
Source record: 116415

Can anyone tell where I can get a 100 MHz TTL clock (i.e. in quantities of 1/2).

Bill Kirkland

2577. Re: Circuit Bd Software for Macs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 22:41:30 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-0709941841300001@k4dii.ksc.nasa.gov>
Source record: 116416

In article <778715151snz@arkas.demon.co.uk>, Michael@arkas.demon.co.uk wrote:
> do Mac's have a feature that equals the processing power of an intel floating
> point processor?

Mike-

As someone else pointed out, the answer to this question may depend on who you ask! Certainly FPUs can be added to many Macs that don't have them.

The issue, as I see it, is that many software companies won't write engineering software for Macs, regardless of how good they are. I think that if Macs were 49% of the market, with MS-DOS/Windows at 51%, nothing would change. Companies concentrate their efforts to maximize profit, as if they were responding to a simple, single-minded computer program. "Better" doesn't count. "More" counts.

73, Fred, K4DII

2578. Circuit Board Specialists of Pueblo, CO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-07 23:44:46 UTC
From: rflukes@silver.cs.umanitoba.ca
Message-ID: <34lj9e$k5k@canopus.cc.umanitoba.ca>
Source record: 116273

Does anyone know if Circuit Board Specialists of Pueblo, CO are still in business? They used to make printed circuit boards for many of the projects in QST magazine.

Thanks,
--Rich
--
Richard F. Lukes rflukes@silver.cs.UManitoba.CA
Computer Science Department
University of Manitoba HOME: (204)-257-6701
Winnipeg, Manitoba CANADA WORK: (204)-474-8696

2579. Need Mic Wiring for Alinco DJ-560

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 00:22:04 UTC
From: jimn0oct@aol.com
Message-ID: <34llfc$i3v@search01.news.aol.com>
Source record: 116417

Does anyone know the plug wiring for an Alinco DJ-560 (not 580) HT?? I'm only interested in an external mic, not a speaker mic--am homebrewing my own, and the wiring diagram is NOT in the owner's manual. Help--need this before this weekend's VHF QSO party.

Thanks and 72, Jim n0oct

2580. Re: Phase Locked Loops

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 00:25:44 UTC
From: sct@po.cwru.edu
Message-ID: <34llm9$qns@usenet.INS.CWRU.Edu>
Source record: 116268

In article <94090513254820@scpcug.com>,
Dennis Mcguire <dennis.mcguire@scpcug.com> wrote:
> Can anyone tell me, in relatively simple terms, how a Phase Locked Loop
> circuit works?

The idea is to compare two signals to each other, using the output of the comparison to alter one of the signals. The effect is to narrow the phase difference between the two until they are "locked" to each other.

A simple but useful loop looks like this:

```
Dirty signal ------ Phase Comp ------ LPF ------ VCO ---+------
| |
+------------------------------+
```

The phase comparator compares the two signals and outputs an indication of the phase difference between them. The Low Pass Filter passes just the DC and near-DC components of the comparator's output to the VCO. The result is that after some settling time, the loop exactly matches the VCO frequency and phase to the input signal. This kind of loop might be used to filter DDS output or some other harmonic-laden signal.

If you tapped the output of the LPF, you'd find that this loop makes a good FSK or FM demodulator. The LPF control of the VCO is much like the microphone controlling a VCO in the transmitter, so in effect you're locking the receiver's VCO to the transmitter's and recreating the voice or data signal necessary to keep the lock.

To see a different application, add a divider to the loop, like this:

```
Input signal ------ Phase Comp ------ LPF ------ VCO ---+------
| |
+------------ Divide -----------+
```

This gives you a wonderful thing -- an arbitrary frequency multiplier! Suppose the input signal is a 100 KHz crystal-controlled oscillator and the divider divides by 16. That means the phase comparator sees two 100 KHz locked signals only if the VCO is running at 1.6 MHz. Make the divider programmable and you can generate any multiple of 100 KHz reachable by the VCO.

To see what makes this really useful, suppose the input signal was 100 Hz, and make the divider divide by 71100. Then you'd have the VCO running at a nice 7.110 MHz, smack in the middle of the 40m novice band. Make the division ratio change under the control of a knob, and you have a "synthesized" VFO for a 40m rig!

These are simplistic PLLs. There are many variations for better performance or special functions. A PLL can be built to lock onto a harmonic of its input signal, or it can do frequency translation sort of like a mixer but without an extra sideband. Several PLLs can be nested to get extra tuning resolution or greater stability. PLLs can do lots of varieties of demodulation and some kinds of modulation.

IMHO, a lot of magic is in the phase comparator. A phase comparator may be as simple as a double-balanced mixer or an XOR gate, but many are more complicated. A typical design might have several flip-flops controlling three or more states on the output.

Weak points of PLLs: They always have some phase noise. They take time to settle to a new frequency. Many are limited to one octave or less in tuning. There's a tradeoff between speed of tuning and tuning resolution, partially solved by more complex dual-modulus dividers. The dividers need to be fast (ECL is sometimes needed) and introduce digital noise into what might be otherwise a quiet analog system. Finally, PLL analysis is well understood but notoriously heavy on math.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2581. Re: Ramsey 2m Amplifier Brick kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 03:38:05 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CvsKrI.AFI@utnetw.utoledo.edu>
Source record: 116269

In article <34ijgm$3ak@sandra.teleport.com>, genew@teleport.com (Gene Wolford) writes:
>pouelle@uoft02.utoledo.edu wrote:
>: In article <Cv5E0I.6xL@fore.com>, ed@fore.com (Ed Bathgate) writes:
>: >
>: >I am thinking of getting the Ramsey 2M Brick amp kit and the matching
>: >tx relay.
>: >
>: >Any experiences / opinions with this unit.
>: >
>: > 73
>: >
>: > Ed N3SDO
>: > Ed@fore.com
>: Ed,
>: I recently built the Ramsey 2m PA-1 and relay. The amp seems to work
>: fine. [SNIP]

>I opted to buy the completed unit. I added up the prices of the amp kit, the
>relay kit, heat sink, and additional assorted hardware and came up with a
>cost just short of the finished and tested unit.
>
>BTW, if you buy the complete unit, you will find that Ramsey does not use a
>relay at all! There is a 1/4 (?) wave piece of coax feeding the received
>signal back around the amp. At the opposite end of the coax from the power
>amp output is a PIN diode which conducts when the amp outputs. This shorts
>the end of the coax, presenting an apparent open circuit at the amp end of
>the coax. Instant switching, works fine on packet.
>
>The only downside to this amp is due to it's being a single transitor
>output. It is therefore biased ON in the middle of it's range, (let's see,
>is that called CLASS A ?). The result is that the amp draws 4+ amps at all
>times. For this reason I don't use it mobile. I occasionally forget and
>leave my mobile amp on, I use one which only draws significant current
>when I talk, thus not running the darn battery down.
>
>73's
>Gene
>KB7WIP
Gene,
The kit is class C if you don't modify it - draws almost no current unless
you are transmitting and is great as a mobile amp for the HT.

You didn't happen to record the PIN diode's part number did you? I'm
interested in eliminating the relay and going to a PIN diode switch.

73
Patrick
KB8PYM
pouelle@uoft02.utoledo.edu

2582. Re: need 100 MHz TTL clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 03:44:47 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CvsL2n.B9v@utnetw.utoledo.edu>
Source record: 116270

In article <34l4ru$icc@bmerha64.bnr.ca>, kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:
>Can anyone tell where I can get a 100 MHz TTL clock (i.e. in
>quantities of 1/2).
>
>Bill Kirkland
>
100MHz TTL clock in quantities of 1/2 -

that woud be a 50MHz oscillator, or 2 25MHz ones :-)

Sorry, I couldn't resist!

Patrick
KB8PYM
pouelle@uoft02.utoledo.edu

2583. Re: Ham-Homebrew Digest V94 #266

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 06:04:52 UTC
From: sphillip@nyx10.CS.du.EDU
Message-ID: <9409080604.AA18653@nyx10.cs.du.edu>
Source record: 116272

```
unsubscribe ham-homebrew
```

2584. WANTED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 09:00:36 UTC
From: sphillip@nyx10.cs.du.edu
Message-ID: <34mjrk$b20@nyx10.cs.du.edu>
Source record: 116281

I was wondering if anybody could tell me how to build an INEXPENSIVE
2Meter to 10GHz Transverter and a 10GHz Antenna? Thanx...

Steve
KB0OLF

2585. Turns Counter-Bauman Sales

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 14:24:05 UTC
From: ells22@aol.com
Message-ID: <34n6q5$n9@search01.news.aol.com>
Source record: 116274

I am trying to find a source for the "Groth" type turns counters. I got one from Bauman Sales in Itasca, Ill. a few years ago but the no longer appear to be in business. Any Ideas??
Tnx Russ, WA6CWV, Boise

2586. 100MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 15:35:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E6F304A@msmail.uthscsa.edu>
Source record: 116275

in digest 267, Bill Kirkland writes:

>Can anyone tell where I can get a 100 MHz TTL clock (i.e. in
>quantities of 1/2).
>
>Bill Kirkland

If you just need a 100MHz pulse rate, you can use any of the
74Fxx or 74ALSxx series chips. They should have no problem
running at 100MHz. All you would need is the 100 MHz
crystal. You can use the 74ALS00 (quad nand gate) chip
and the 100MHz crystal as an oscillator.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.

Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

2587. need 100 MHz TTL clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 15:40:22 UTC
From: jangus@skyld.grendel.com
Message-ID: <779038822snx@skyld.grendel.com>
Source record: 116276

In article <34l4ru$icc@bmerha64.bnr.ca> kirkland@bgtys22.bnr.ca writes:

> Can anyone tell where I can get a 100 MHz TTL clock (i.e. in
> quantities of 1/2).

Wouldn't that be a 50 MHz clock then?

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

Hate "Green Card Lottery"? Want to help curb ignorant crossposting on Usenet?
E-mail ckeroack@hamp.hampshire.edu for more information, or read news.groups.

2588. Re: Turns Counter-Bauman Sales

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 16:14:57 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.779040897@aries>
Source record: 116277

ells22@aol.com (ELLS22) writes:

>I am trying to find a source for the "Groth" type turns counters. I got
>one from Bauman Sales in Itasca, Ill. a few years ago but the no longer
>appear to be in business. Any Ideas??
>Tnx Russ, WA6CWV, Boise
A couple of months ago he (Bauman) was still there. Did u try info for
Bauman personal phone #?

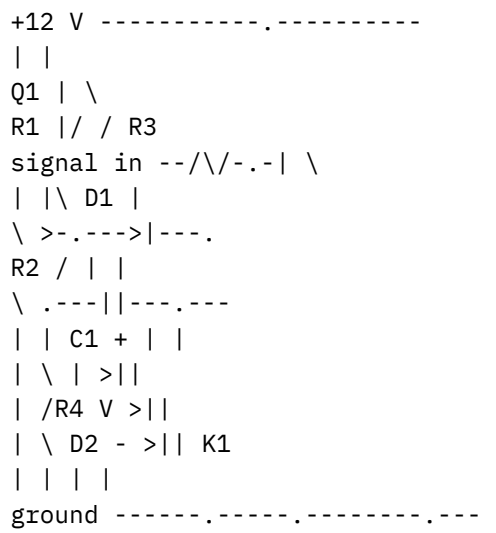
Chuck Hawley, KE9UW

2589. Re: Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 17:09:22 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994Sep8.170922.17814@kocrsv01.delcoelect.com>
Source record: 116278

In article <34kebn$1bj@anemone.saclay.cea.fr>, sol@soleil.serma.cea.fr (Michel Soldevila - LENR) writes:
>
> Hi everybody
>
> My coax relays are 26 volts models. A long time ago, I saw a circuit able to trigger
> such relays from a 12 volt source. The only thing I remember is that it was a kind
> of voltage doubler who supply the relay with 2x12 volt during a short time, and then
> supply it with 12v.
>
> Does anybody knows this circuit ?
>
> Thanks a lot
>
> 73 de F1GOC K

I remember seeing that too. I don't remember the exact circuit, but here is my best guess.



C1 charges through R3 and and R4 when Q1 is off. When Q1 is switched on, it applies 12V to the low side of C1. The voltage on C1 adds to this 12V and you get 24V across the relay. D1 allows 12 (well, 12 - 0.6) volts to be applied to K1 after C1 has discharged. D2 shunts any inductive kickback back into the coil. If K1 must open rapidly, you might want to substitute an RC snubber circuit.

I have not tried this circuit, but it looks likely. Does anyone remember the original circuit? Is it simpler than this?

--
Jim Buchanan N9SDV
c22jrb@kopt0017.delcoelect.com "Catch 22"
c22jrb@delphi.com
'73 BMW R75/5 "Frau Bluecher"
--
Jim Buchanan
c22jrb@kopt0017.delcoelect.com "Catch 22"
c22jrb@delphi.com
'73 BMW R75/5 "Frau Bluecher"

2590. Re: Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 17:15:08 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994Sep8.171508.18067@kocrsv01.delcoelect.com>
Source record: 116279

In article <1994Sep8.170922.17814@kocrsv01.delcoelect.com>, c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
>
> In article <34kebn$1bj@anemone.saclay.cea.fr>, sol@soleil.serma.cea.fr (Michel Soldevila - LENR) writes:
>
> --
> Jim Buchanan N9SDV
> c22jrb@kopt0017.delcoelect.com "Catch 22"
> c22jrb@delphi.com
> '73 BMW R75/5 "Frau Bluecher"
> --
> Jim Buchanan
> c22jrb@kopt0017.delcoelect.com "Catch 22"
> c22jrb@delphi.com
> '73 BMW R75/5 "Frau Bluecher"

Wow, I've never (to my knowledge...) double sig'd before! Good work Jim!
--
Jim Buchanan
c22jrb@kopt0017.delcoelect.com "Catch 22"
c22jrb@delphi.com
'73 BMW R75/5 "Frau Bluecher"

2591. Re: Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 17:25:00 UTC
From: tgold@microvst.demon.co.uk
Message-ID: <779045100snz@microvst.demon.co.uk>
Source record: 116280

In article <34kebn$1bj@anemone.saclay.cea.fr>
sol@soleil.serma.cea.fr "Michel Soldevila - LENR" writes:

> Hi everybody
>
> My coax relays are 26 volts models. A long time ago, I saw a circuit able to
> trigger
> such relays from a 12 volt source. The only thing I remember is that it was a
> kind
> of voltage doubler who supply the relay with 2x12 volt during a short time, and
> then
> supply it with 12v.
>
> Does anybody knows this circuit ?
>
> Thanks a lot
>
> 73 de F1GOC K
>

The trick is to use both your 12v supply plus 12v from a capacitor to
push the relay over and then hope that 12v is sufficient to hold it
over. No guarantee that only 12v will apply enough contact pressure!

You will need a 12v DPDT relay and a 330-470 mFd @ 25 volt capacitor. Also
put rectifier diodes across both your 26v and the added 12v relays to kill the
spikes plus one more to feed the capacitor.

I would guess that you can figure it out. Regret I can't draw a schematic
on a keyboard.

By the way you can get a very neat complete kit of parts and PC board from
Down East Microwave in Maine, tel 207-948-3741 fax 207-948-5157. Costs $10
for their model DEM RVD-1.
--
Anthony R. Gold, G3SKR and AA2PM

2592. AG6K and this month's Tech Correspondence in QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 19:37:18 UTC
From: rdewan@uhura.cc.rochester.edu
Message-ID: <1994Sep8.193718.14078@galileo.cc.rochester.edu>
Source record: 116282

I was leafing through this month's QST magazine. The technical
correspondence column made some very interesting reading.

I had previously read the articles on VHF/UHF parasitics in HF amps,
design of HF amps, design of balanced tuner and so on by Rich Measures in QST.
His articles on these topics have also appeared in the now defunct Ham Radio
Magazine. This month's Tech Correspondence column is devoted to a critical
examination of Rich's theories. It has comments by an engineer from
Eimac, an engineer who designs amps for ameritron and others. To put
it mildly, it disagrees with Rich Measures.

What did you think?

On many points, it is clear that the critics are right. For instance,
consider the anode parasitic supressor. The common form of it is a
resistor with a coil wound around it. One of Rich's ideas is
to make the coil out of nichrome wire (has some resistance) to
prevent V/UHF parasitics. He sells this in kit form. But as the critics
point out, At VHF/UHF the coil has high impedance and it is the resistor
that is a part of the anode circuit, lowering its Q at those frequencies.

The critics also disagreed about removing electronic drive control, alc,
using improper protection in the HV section, using resistor in grid-ground
circuit to introduce negative feedback to reduce gain and most seriously,
about using MOVs in the HV circuit.

While I tend to agree with the critics generally, several of them
said that UHF/VHF parasitics are not a problem in most commercial
amateur amps. My tiny experience in these things seems to be otherwise.
I have seen amps with some of the symptoms that Rich Measures described.

What has your experience been?

Another curious point: If the article was so off the mark, what does
it say about QST's editorial process. It is bad that it hapened
but good that they own up to it? or what? In QST's defense,
even the best of scientific journals have this problem.

Honey, where is the salt shaker? I received this month's QST. :)

Rajiv
aa9ch/2

2593. Re: Ramsey 2m Amplifier Brick kit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 20:10:07 UTC
From: ed@fore.com
Message-ID: <Cvtuov.7nu@fore.com>
Source record: 116283

>: > Ed N3SDO asks:
>I am thinking of getting the Ramsey 2M Brick amp kit and the matching
>: >tx relay.
>: >
>: >Any experiences / opinions with this unit.
>: >

>The only downside to this amp is due to it's being a single transitor
>output.

I have heard that there is a better transistor that can/could be used in the same design, swr protection, better thermal stablity... anybody know which one that is?

>You didn't happen to record the PIN diode's part number did you? I'm
>interested in eliminating the relay and going to a PIN diode switch.

Humm, diode switching instead of relays... Yeah, sounds nifty, add me to the list of people desiring this mod.

Ed N3SDO
Ed@fore.com

2594. Re: EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 20:31:38 UTC
From: hbrown@nadir.resd
Message-ID: <1994Sep8.203138.20298@knight.vf.ge.com>
Source record: 116284

I've heard that Russian tubes are available. Does anyone have info (costs, types, where) in the US?

73, Harry, W3IIT

hbrown@resd.vf.ge.com

2595. Re: EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 20:32:11 UTC
From: hbrown@nadir.resd
Message-ID: <1994Sep8.203211.20361@knight.vf.ge.com>
Source record: 116285

I've heard that Russian tubes are available. Does anyone have info (costs, types, where) in the US?

73, Harry, W3IIT

hbrown@resd.vf.ge.com

2596. Info abt 8874

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 20:35:53 UTC
From: hpaik@silver.sdsmt.edu
Message-ID: <hpaik.92.2E6F75A9@silver.sdsmt.edu>
Source record: 116286

Could any body give me the electrical specificaton
(i.e., max plate current/voltage, max grid current/voltage,...)
of the ceramic triod 8874 ?
Thanks,
hpaik@silver.sdsmt.edu

2597. Re: need 100 MHz TTL clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 21:30:00 UTC
From: tnichols@bmers29c.bnr.ca
Message-ID: <34nvoo$ceb@bmerha64.bnr.ca>
Source record: 116287

In article <34l4ru$icc@bmerha64.bnr.ca>, kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:
|> Can anyone tell where I can get a 100 MHz TTL clock (i.e. in
|> quantities of 1/2).
|>
|> Bill Kirkland
|>

Okay, now that the 1/2-of-100 MHz-equals-50 MHz people have had their fun, here is an actual source:

Q-Tech Corporation
10150 West Jefferson Boulevard
Culver City, CA 90232-3502
phone (310) 836-7900
fax (310) 836-2157

They sell up to 100 MHz TTL clocks in DIP cans and flat packs.

Such a thing DOES exist. So there.

Todd Nichols Bell Northern Research, Ottawa, Ontario (613) 765-3560
tnichols@bnr.ca
KB0HQU/VE3 BNR didn't say it; I did

2598. Re: Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 21:34:06 UTC
From: mack@ncifcrf.gov
Message-ID: <CvtyKu.Brr@ncifcrf.gov>
Source record: 116288

In article <1994Sep8.170922.17814@kocrsv01.delcoelect.com> c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
>
>In article <34kebn$1bj@anemone.saclay.cea.fr>, sol@soleil.serma.cea.fr (Michel Soldevila - LENR) writes:
>>
>> Hi everybody
>>
>> My coax relays are 26 volts models. A long time ago, I saw a circuit able to trigger
>> such relays from a 12 volt source. The only thing I remember is that it was a kind
>> of voltage doubler who supply the relay with 2x12 volt during a short time, and then
>> supply it with 12v.
>>
>> Does anybody knows this circuit ?
>>
Low power (relay about 1/2" high) versions of these were door prizes
at the Eastern States VHF conf in CT a few weeks ago. Presumably some
company who was sponsoring the event made or supplied them. I don't
know who they were. However Ron Klimas (WV1Z or something like that)
who was an organiser of the conference might remember.
klimas@uhavax.dnet@ipgate.hartford.edu.

I've made doublers out of a 555 chip as square wave osc, followed
by a pair of pushpull power transistors (don't need heat sink as they
don't disapate much power) followed by a diode voltage doubler.
Joe Mack NA3T

2599. Re: Heeeeeeeeeeeelp!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 21:53:18 UTC
From: c22jrb@kocrsv01.delcoelect.com
Message-ID: <1994Sep8.215318.477@kocrsv01.delcoelect.com>
Source record: 116289

In article <1994Sep8.170922.17814@kocrsv01.delcoelect.com>, c22jrb@kocrsv01.delcoelect.com (Jim Buchanan) writes:
[...]
> I remember seeing that too. I don't remember the exact circuit, but here is
> my best guess.
>
>
>
> +12 V -----------.----------
> | |
> Q1 | \
> R1 |/ / R3
> signal in --/\/-.-| \
> | |\ D1 |
> \ >-.--->|---.
> R2 / | |
> \ .---||---.---
> | | C1 + | |
> | \ | >||
> | /R4 V >||
> | \ D2 - >|| K1
> | | | |
> ground ------.-----.--------.---
>
> C1 charges through R3 and and R4 when Q1 is off. When Q1 is switched on, it
> applies 12V to the low side of C1. The voltage on C1 adds to this 12V and
> you get 24V across the relay. D1 allows 12 (well, 12 - 0.6) volts to be
> applied to K1 after C1 has discharged. D2 shunts any inductive kickback back
> into the coil. If K1 must open rapidly, you might want to substitute an RC
> snubber circuit.
>
> I have not tried this circuit, but it looks likely. Does anyone remember
> the original circuit? Is it simpler than this?

BZZZT! WRONG!

I was at home mowing my grass when I realized that there was a problem with this idea. A big one.

Due to K1, C1 won't be able to charge up to 12V when K1 is not energized. The only quick solution I can think of adds three more parts. I already felt the circuit was too complex, I know the original was simple and elegant.

I'll think about the problem some more...

--
Jim Buchanan N9SDV
c22jrb@kopt0017.delcoelect.com (Does the "c22" stand for "catch 22"?)
c22jrb@delphi.com This line intentionaly left blank
'73 BMW R75/5 "Frau Bluecher"

2600. SETIQuest Magazine - Exobiology

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-08 23:06:47 UTC
From: klaes@mtwain.enet.dec.com
Message-ID: <34o1vd$4ag@nntpd.lkg.dec.com>
Source record: 116290
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

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(what else do you do after starting BYTE?)
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2601. unusual modulation techniques

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 00:57:25 UTC
From: vimx <vimx@delphi.com>
Message-ID: <hY+SmR1.vimx@delphi.com>
Source record: 116291

A while back I asked about putting 4 distinct voices on a carrier using
both sidebands and both quadrature phases. I was told that it's not possible
to use both techniques at the same time. I wonder what you'd get, then , if
you suppressed one sideband of a QAM signal. (?)
Also, I've noticed that the sidebands of an FM signal seem to contain
harmonics of the tone being carried. I wonder if there is some way of
processing audio (such as distorting it) that will cause an AM transmitter to
transmit FM. I want to know if I can transmit FM with a non-variabkle
oscillator producing the carrier. (?) Is this possible?

2602. xtal vs ceramic resonator. accuracy?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 01:00:13 UTC
From: mcraw@coho.halcyon.com
Message-ID: <34oc2t$58k@news.halcyon.com>
Source record: 116292

Newsgroups: amateur.homebrew
Followup-To:
Distribution: usa
Organization: NWNEXUS, Inc. - We Make Internet Easy
Cc:
Subject: Xtal vs Ceramic Resonator?? accuracy?
Summary:
Keywords:

I am in the middle of a Radio Control system design that uses a PIC micro controller. I use a 4 MHZ ceramic resonator for the clock and use this as the basis of the real time clock/calander feature. I can't seem to get accuracy better than about 5 minutes a month. Is there something inherently wrong with this setup?? Would a 4Mhz crystal plus caps be any more accurate? Any suggestions are appreciated.

Thanks in advance, :)

--

Marshall Craw |
sys. North Bend, WA | "Better living through Faith, Family, and hard Work"
<mcraw@halcyon.com> |

2603. ICOM 22S mod (repeater switch)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 03:23:45 UTC
From: n4zbb@toybox.raleigh.nc.us
Message-ID: <1994Sep9.032345.4806@toybox.raleigh.nc.us>
Source record: 116293
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

A friend of mine (without internet access) has a ICOM 22s that has
been mod'ed so that all the repeater pairs btwn 146 - 148 on the
front panel instead of the '1', '2', '3', etc. where the diode matrix
determined the Tx and Rx freq.s and included simplex. The
problem is, now that the mod had been made, the simplex freq.s are
no longer avail., but a four row diode matrix is avail.

He has heard of a way of adding back in the simplex freq.s using this
diode matrix. He wants to use the rig for packet, and free up another
rig.

Anyone familar with is mod to the 22s and a way to add back in simplex ?

2604. Mitrek 800 Mhz Service Manual/ Info ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 03:26:49 UTC
From: n4zbb@toybox.raleigh.nc.us
Message-ID: <1994Sep9.032649.4933@toybox.raleigh.nc.us>
Source record: 116294
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have aquired an 800 Mhz Mitrek rig, and wandered if there is a service manual or info avail. on this unit. Also, is it even remotely possible to tune this rig in the 33 cm band ?

Thanks..

2605. Amplifier Research model 40L

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 08:44:50 UTC
From: davies@mobira.nmp.nokia.com
Message-ID: <34p7a2$aub@noknic.nokia.com>
Source record: 116295

I have recently got hold of a broken Amplifer Research (AR) model 40L broadband amp. I think it is spec'd at 1 to 250MHz, 40W minimum ouput. Gain maybe 45 to 50dB. It blows its EHT fuse.

Inside it uses 8 off RCA 8121 valves - does anyone know what these are spec'd at? I'm under the impression they are run conservatively, and I might be able to up the output power by 3dB or more, assuming I was able to fix the amp. The valve amp is preceded by a few stages of solid state, which I think are OK.

Does anyone have a schematic for such an amplifier? I'd be delighted to refund cost of photocopying and FAX/postage costs. Or any basic info, like valve voltages likely to be used? Has anyone every played or fixed one of these type amps?

Thanks for any help.
Steve Davies G4KNZ, nmpuk::davies@nmpost.nmp.nokia.com
FAX: +44 276-676671.

2606. Re: Mitrek 800 Mhz Service Manual/ Info ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 13:58:41 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <34ppmh$8sd@abyss.West.Sun.COM>
Source record: 116296

In article 4933@toybox.raleigh.nc.us, n4zbb@toybox.raleigh.nc.us (Ken M. Edwards) writes:
>I have aquired an 800 Mhz Mitrek rig, and wandered if there is a
>service manual or info avail. on this unit. Also, is it even remotely
>possible to tune this rig in the 33 cm band ?
>
>Thanks..

Try calling Motorola National Parts at (800) 422-4210 for manual. A radio
as recent as the Mitrek should be no problem for a manual.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Sir, over there.... is that a man?" *

2607. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 14:01:47 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <34ppsb$8sd@abyss.West.Sun.COM>
Source record: 116297

In article 15967@rogue.com, dshalita@rogue.com (David Shalita) writes:
>I also need to build xtal filters for a NE-602 project and this method
>looks attractive. Need following filters:
> 10.7 mhz 55 khz bandwidth
> 10.7 mhz 15 khz bandwidth
>
>Can I use cheap Microprocessor xtals for this 10.7 mhz task?
>
>Can I make a xtal filter "as wide as" 55khz or 15khz with this technique?
>
>How can I determine input and output impedance requirements
>for the xtal filters produced by this method?

It isn't worth the trouble. A&A parts is always at the TRW swap meet selling
30KHz and 15KHz xtal filters for maybe $7/ea. You can probably do better
if you go to a distributor, but there's likely to be a minimum order.

The 55KHz wide filter may be a problem, but I bought a couple of 15KHz
filters from A&A last year.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Sir, over there.... is that a man?" *

2608. Re: EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 14:46:59 UTC
From: cbetz@radioman.cray.com
Message-ID: <1994Sep9.094700.19701@ned.cray.com>
Source record: 116298

In article <laplante.3.011A184A@rsvl.unisys.com>, laplante@rsvl.unisys.com (Bryan LaPlante) writes:
> What are people using for power amplification on EME? I'm looking at 2m or
> 432, and trying to keep the costs down somewhat. How much power are you using,
> and what is your amp... homebuilt, surplus, used....?

If you are going to use a reasonably sized antenna system, then a very economical amp would be a pair of 4CX250s. These tubes are very common on the surplus market, and usually at reasonable prices ($25-40, maybe less). The sockets for these tubes are also fairly inexpensive. There have been numerous articles written on amps for both 2m & 432 that use a pair of these tubes. 10 watts of drive should get you about 600 - 800 watts output. The disadvantage of using tetrodes is the fact that you have to provide an additional power supply for the screen.

I have been running 2m EME for about a year. I'm running a pair of 4CX300A's which deleivers about 800 watts output. It is a hamebrew amp that I bought at a hamfest. These tubes work fine on 2m, but they are a lot harder to find than the '250s, and generally the sockets are more expensive (the tubes have a bayonet style base rather than pins, so they require special sockets).

My antenna system is 4 x 10 element yagis (K5GL design). It's actually a fairly small system for EME, but it works reasonably well. I have made 11 QSOs with it, including several other 4 yagi stations, plus I've heard quite a few stations that I didn't complete QSOs with. I have, at times, been able to hear my own echos with it as well.

Charlie Betz
N0AKC

2609. H.P. Digital Panbel Meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 15:33:03 UTC
From: ells22@aol.com
Message-ID: <34pv7f$q01@search01.news.aol.com>
Source record: 116299

Can anyone help me with documentation for H.P. Model 3431A Digital Panel meters? I have acquired two of them that I want to use in my 4-1000A Amplifier Project but I don't have pinout numbers or any other info. They are AC operated and look to be 3 1/2 digits. Anyone help on this one?

73 from Russ WA6CWV, Boise

2610. Re: ICOM 22S mod (repeater switch)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 16:57:30 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-0909941257300001@k4dii.ksc.nasa.gov>
Source record: 116300
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Sep9.032345.4806@toybox.raleigh.nc.us>,
n4zbb@toybox.raleigh.nc.us (Ken M. Edwards) wrote:
> A friend of mine (without internet access) has a ICOM 22s that has
> been mod'ed so that all the repeater pairs btwn 146 - 148 on the
> front panel instead of the '1', '2', '3', etc. where the diode matrix
> determined the Tx and Rx freq.s and included simplex. The
> problem is, now that the mod had been made, the simplex freq.s are
> no longer avail., but a four row diode matrix is avail.

Ken-

If that is the same mod as I have, each switch postion is actually for the lower frequency of the repeater pair. When the left-hand toggle switch is in one postion, the radio transmits and receives on the same frequency. When in the other position, it transmits and receives 600 KHz apart. The right-hand toggle switch determines whether the transmit frequency is offset plus 600, or the receive frequency is offset plus 600.

Included among those repeater frequencies, are the simplex frequencies as well. As I recall, the switch has MANY postions, and covers from 146.01 to 147.57, in 30 KHz steps. There was an ultra-miniature toggle switch that could be added, that would change the main switch range by 15 KHz, so that all channels could be accessed. A second ultra-miniature toggle switch could be added to make BOTH transmit and receive frequencies be offset plus 600 from the switch setting.

As you suggested, I believe there were one or two "blank" switch postions that might be used for diode-programmed frequencies.

73, Fred, K4DII

2611. Re: 100MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 17:01:30 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-0909941301300001@k4dii.ksc.nasa.gov>
Source record: 116301

In article <2E6F304A@msmail.uthscsa.edu>, MUENZLERK@uthscsa.EDU (Muenzler, Kevin) wrote:
> If you just need a 100MHz pulse rate, you can use any of the
> 74Fxx or 74ALSxx series chips. They should have no problem
> running at 100MHz. All you would need is the 100 MHz
> crystal.

Kevin-

A 100 MHz crystal is most likely used in a fifth or seventh overtone mode. How do you ensure that the crystal oscillates at the correct overtone, instead of the fundamental or an "easier" overtone?

73, Fred, K4DII

2612. Re: 100MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 19:56:05 UTC
From: mack@ncifcrf.gov
Message-ID: <CvvopI.HrL@ncifcrf.gov>
Source record: 116302

In article <fred-mckenzie-0909941301300001@k4dii.ksc.nasa.gov> fred-mckenzie@ksc.nasa.gov (Fred McKenzie) writes:
>In article <2E6F304A@msmail.uthscsa.edu>, MUENZLERK@uthscsa.EDU (Muenzler, >Kevin) wrote:
>> If you just need a 100MHz pulse rate, you can use any of the
>> 74Fxx or 74ALSxx series chips. They should have no problem
>> running at 100MHz. All you would need is the 100 MHz
>> crystal.
>
>Kevin-
>
>A 100 MHz crystal is most likely used in a fifth or seventh overtone
>mode. How do you ensure that the crystal oscillates at the correct
>overtone, instead of the fundamental or an "easier" overtone?
>
>73, Fred, K4DII

Good point. I assume you're running a multivibrator with the crystal in one feedback arm. How about putting an L - section filter (presumably L from output back to input and C across input to ground) and tweek the C till it runs in the right overtone?

I did something like this with an RC coupled TTL multivibrator that I wanted to put a 10MHz xtal into. I got it running about 10MHz without the xtal by changing the R&C, and then put the xtal in between the input and the RC junction.

Joe Mack NA3T

2613. SWR meter suggestions?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 20:07:10 UTC
From: gxd@po.CWRU.Edu
Message-ID: <34qf9e$l2q@usenet.INS.CWRU.Edu>
Source record: 116303

Hello,
I am still very new to amateur radio, but I really like to build
circuits. Does anyone have a schematic for a home-built SWR meter
for 2M? I haven't had any success finding one in any of the ARRL
publications I've been able to find.
Thanks in advance.
--
Guy A. DeRose
Physicist, PP-ASEL, KE6JTN, Homebrewer

2614. Re: H.P. Digital Panbel Meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 22:21:01 UTC
From: ells22@aol.com
Message-ID: <34qn4d$3eu@search01.news.aol.com>
Source record: 116304

Thanks for the responses to this inquiry. I have what I need !!!
Russ Ellsworth WA6CWV

2615. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 22:58:41 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <Cvvx5u.CqL@srgenprp.sr.hp.com>
Source record: 116305

David Shalita (dshalita@rogue.com) wrote:

: >I need to build a crystal filter for a receiver that I am designing
: >but I can't seem to find any information exactly on how to do it. ...
:
: #AL N1AL replies:
: #To do a paper design, ... (etc.)

: I also need to build xtal filters for a NE-602 project and this method
: looks attractive. Need following filters:
: 10.7 mhz 55 khz bandwidth
: 10.7 mhz 15 khz bandwidth
:
: Can I use cheap Microprocessor xtals for this 10.7 mhz task?

You can use microprocessor crystals if a somewhat poorer-performance filter is acceptible. Cheap oscillator crystals will likely have worse spurious responses (generally within a few 10's of kHz of the center frequency.) They also may have higher series equivalent resistance, which will increase filter insertion loss. You can solve the spur problem by using more poles (crystals) in the filter, but that will increase insertion loss even more. One solution is to break the filter into two parts (say a pair of 2-pole filters instead of one 4-pole) and insert a low-gain amplifier between them to make up the loss.

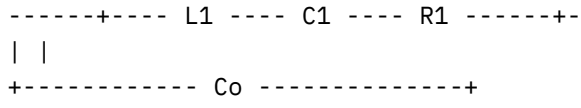
: Can I make a xtal filter "as wide as" 55khz or 15khz with this technique?

It depends on the crystal circuit parameters. Generally, the smaller the shunt (holder) capacitance, the wider the filter you can make. My gut feel is that 55 kHz would be quite difficult to achieve at 10.7 MHz.

: How can I determine input and output impedance requirements
: for the xtal filters produced by this method?

It depends on crystal parameters and the value of the shunt capacitors used in the filter. I have found that for narrowband (CW) filters, you can use nearly any crystal with nearly any desired in/out resistance by proper selection of the shunt capacitors. (Bigger capacitors for lower impedances.) For wideband filters, a too-low load impedance will make it impossible to get a wide enough bandwidth with any value shunt capacitors.

Let's run through a simple example. Standard model of quartz crystal:



Let L1 = .02 H, C1 = .01 pF, R1 = 30 ohms, and Co = 5 pF.
Series resonant frequency is thus 1 / (2 PI SQRT (L1 C1)) = 11.25 MHz
and unloaded Q is (2 PI f L1 / R1) = 47,140. With a 270-ohm load,
the widest bandwidth you could obtain would be 2387 Hz, with the shunt
capacitors = 0 pF (removed). To get 55 kHz, you would theoretically
have to go to at least a 6,880 ohm load impedance. In reality, however,
you would not achieve that, since the parallel resonance (L1, C1 and Co)
is only 11.2 kHz higher in frequency than the series resonance (L1/C1).
Wide bandwidth requires a crystal with small shunt capacitance (Co)
and/or low-impedance motional parameters (small L1 and large C1).

Unfortunately, these parameters are never specified for cheap oscillator
crystals, so you have to just build the filter and tweak for best
performance.

: A second related question about 10.7 mhz [ceramic] filters. ...
:
: How is bandwidth performance different with 3 identical bandwidth ceramic
: 10.7 mhz filters in series versus having 2 in series? Does it impact
: insertion loss? All filters seem matched at 330 ohms in and out.

I'm not very familiar with ceramic filters, but I expect that using
3 in tandem (rather than 2) would result is higher insertion loss and
slightly narrower bandwidth. The skirt selectivity and ultimate
rejection would be much better.

AL N1AL

2616. Re: AG6K and this month's Tech Correspondence in QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 23:09:47 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CvvxoC.D07@srgenprp.sr.hp.com>
Source record: 116306

Rajiv Dewan (rdewan@uhura.cc.rochester.edu) wrote:

: ... One of Rich's ideas is
: to make the coil out of nichrome wire (has some resistance) to
: prevent V/UHF parasitics. He sells this in kit form. But as the critics
: point out, At VHF/UHF the coil has high impedance and it is the resistor
: that is a part of the anode circuit, lowering its Q at those frequencies.

Measures has been flogging his "low-Q" parasitic choke idea for years.
As pointed out by others, he is totally wrong. VHF parasitics in HF
amplifiers are caused by high-Q parasitic resonances (at the VHF frequencies)
in the plate tank circuit and related components. High-Q resonances tend
to result in feedback, which makes the "amplifier" act like an oscillator.

: The critics also disagreed about removing electronic drive control, alc,
: using improper protection in the HV section, using resistor in grid-ground
: circuit to introduce negative feedback to reduce gain and most seriously,
: about using MOVs in the HV circuit.

I agreed with all the critics' comments except for one item (see below).

: While I tend to agree with the critics generally, several of them
: said that UHF/VHF parasitics are not a problem in most commercial
: amateur amps. My tiny experience in these things seems to be otherwise.
: I have seen amps with some of the symptoms that Rich Measures described.

VHF parasitics are definitely a potential problem. The question is the
best way to fight them. The first line of attack is careful physical
layout of the tank circuitry to reduce stray inductance to a minimum.
That moves the parasitics higher in frequency, where they are easier to
suppress. It is also important to isolate the amplifier input and output:
That kind of feedback can be impossible to suppress, even with the best
"parasitic suppressor!"

One place where I disagreed with the critics is the use of equalizing
resistors and capacitors on high-voltage rectifier strings. If I get
time, I plan to write a letter to QST discussing the issue.

AL N1AL

2617. Re: unusual modulation techniques

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 23:15:21 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CvvxxL.D2x@srgenprp.sr.hp.com>
Source record: 116307

vimx (vimx@delphi.com) wrote:
: Also, I've noticed that the sidebands of an FM signal seem to contain
: harmonics of the tone being carried. I wonder if there is some way of
: processing audio (such as distorting it) that will cause an AM transmitter to
: transmit FM.

Not possible without some kind of frequency or phase modulation of the carrier.
You could get the spectrum to look similar on a spectrum analyzer, but the
modulation harmonics would have the wrong phase: the signal would not be FM.

: I want to know if I can transmit FM with a non-variabkle
: oscillator producing the carrier. (?) Is this possible?

Yes, it has been done for many years (at least since before WWII).
The trick is to follow the oscillator with a phase modulator. (WWII
radios used a reactance modulator for that.) To convert the phase
modulation to FM only requires changes to the microphone amplifier
circuit: a 6 dB-per-octave low-pass filter (i.e. an integrator).

AL N1AL

2618. Wanted: RF Transistor 2SC1947

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-09 23:20:28 UTC
From: climatol@gnv.ifas.ufl.edu
Message-ID: <1994Sep9.182028.5292@tower>
Source record: 116308
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I need a 2SC1947, which according to my cross-ref is equivalent to an ECG 341 (or NTE 341). This is a 4-watt rf power transistor that has an oddball lead arrangement and the emitter tied to the case. This makes it very difficult to substitute a more common transistor.

My local electronics dealer tried to order the ECG equivalent, and it has been backordered for a while. Apparently they are out of them and don't know when they plan to make/get more. The dealer wanted $6.50 for the thing. If anyone out there has one they can sell me (or can get one fairly quickly) for a price that isn't too outrageous, I'd love to hear from you.

By the way, I need the transistor to repair a Diawa MT-20 handheld. This is an ancient and rare two meter amateur handheld transceiver. If anyone has any accessories for the MT-20 (particularly a battery pack, working or not) that they'd like to sell, I'm interested.

Thanks,

-- Bob Johnson, WB4JCM
rejo@gnv.ifas.ufl.edu

2619. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 00:01:14 UTC
From: rkarlqu@scd.hp.com
Message-ID: <34qt0a$394@hpscit.sc.hp.com>
Source record: 116309

In article <Cvvx5u.CqL@srgenprp.sr.hp.com>,
Alan Bloom <alanb@hpnmarb.sr.hp.com> wrote:
>: Can I make a xtal filter "as wide as" 55khz or 15khz with this technique?
>
>It depends on the crystal circuit parameters. Generally, the smaller
>the shunt (holder) capacitance, the wider the filter you can make.
>My gut feel is that 55 kHz would be quite difficult to achieve at
>10.7 MHz.
>
>AL N1AL

The real gotcha with trying to do 55 kHz. is that you will probably run into spurious resonances before you get 27.5 kHz. above series resonance. And there is nothing you can do about this, as far as I know. It might help to work at 21.4 MHz. instead.

Rick N6RK
rkarlqu@scd.hp.com

2620. Re: unusual modulation techniques

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 00:12:01 UTC
From: rkarlqu@scd.hp.com
Message-ID: <34qtkh$3lc@hpscit.sc.hp.com>
Source record: 116310

In article <CvvxxL.D2x@srgenprp.sr.hp.com>,
Alan Bloom <alanb@hpnmarb.sr.hp.com> wrote:
>vimx (vimx@delphi.com) wrote:
>: Also, I've noticed that the sidebands of an FM signal seem to contain
>: harmonics of the tone being carried. I wonder if there is some way of
>: processing audio (such as distorting it) that will cause an AM transmitter to
>: transmit FM.
>
>Not possible without some kind of frequency or phase modulation of the carrier.
>You could get the spectrum to look similar on a spectrum analyzer, but the
>modulation harmonics would have the wrong phase: the signal would not be FM.

Actually, if you filter out either the upper or lower sideband of an AM
signal, you will convert some of the AM to FM. Hence slope detection works
for hearing AM on an FM receiver as well as the usual FM on an AM receiver.

Also, if you strip of one sideband of a QAM signal, it will no longer be
possible to separate out the I and Q signals.

Before you ask the question: there is no such thing as single sideband FM.
If you throw away the upper sideband(s) of an FM signal, it will be distorted AM.

>: I want to know if I can transmit FM with a non-variabkle
>: oscillator producing the carrier. (?) Is this possible?
>
>The trick is to follow the oscillator with a phase modulator. (WWII
>radios used a reactance modulator for that.) To convert the phase
>modulation to FM only requires changes to the microphone amplifier
>circuit: a 6 dB-per-octave low-pass filter (i.e. an integrator).

Of course you need to follow the phase modulator with a frequency
multiplier to get "wideband" FM.

And the phase modulation can be done without a variable phase amplifier.
Simply generate a double sideband suppressed carrier AM signal and then
reinject the carrier with a 90 degree phase shift. This is called the
"Armstrong method" historically, I believe.

>AL N1AL

RicK N6RK
rkarlqu@scd.hp.com

2621. Freq. Counter Problem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 01:41:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <9SEP199420411601@vax2.concordia.ca>
Source record: 116311

I have an older model tube general receiver with analog tuning. To
improve my tuning accuracy I hooked up a frequency counter by taking
a tap from the oscillator plate line using a 1 uf 1 kv capacitor. The
lead was sent to the frequency meter and the ground of the meter was
connected to the ground of the radio. This arrangement works exceptionally
well (7 decimal place accuracy, as long as I remember to subtract
the oscillator's frequency from the meter reading) except on 3.3 to 5.6 MHz,
where I get no reading on the meter. However the oscillator is obviously
working since I tune in stations effectively and the analog frequency
reading appears to correspond to the stations' announced frequencies.

Could anyone hazard a guess as to why the anomaly for 3.3 to 5.6 MHz?

Thanks for any suggestions.

Regards,
Jack

2622. [Q] Suggestions for remote powerdown?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 03:01:31 UTC
From: ruhtra@turing.toronto.edu
Message-ID: <1994Sep9.230130.24018@jarvis.cs.toronto.edu>
Source record: 116312
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

OK, here's the situation:
I have a 486 running Linux, zyxel modem, etc.
I like to have my machine up all the time for my answering machine software, dialin access, etc.
I'm somewhere else and I know there's a lightning storm heading towards my computer.

What I'd like to be able to do:
Switch off my machine remotely by having the computer cut power to its own power bar via a serial port or some other digital signal from my computer (ie after killing processes and syncing filesystems).

The software side is trivial. Just have my voice/fax software run a script on some command. When the system halts or power goes down, the phone line will automatically go back on hook. And no, my machine is not a sentient lifeform! :-)

Gravy:
It would be nice to be able to specify a time duration after which the system will automatically revive itself. This is not critical and I figure I can work this out myself.

QUESTION(S):
Has someone built such a device?
What sorts of relays/switches could I consider using?
Would the bouncing of (say)relay contacts pose their own problems like spikes to the computer?
Perhaps it's safer(regulation-wise) and simpler to just have a mechanical device with solenoids sit on top of the powerbar's rocker switch? It just doesn't seem elegant.
What about other lightning-safe concerns?

I'm not looking for something that will survive a direct hit on a house with the resultant charge arcing across all the open switches. Just something reasonably cheap, simple, and effective for the usual lightning-induced power fluctutations.

arthur
--
Choices don't scare me. However, a lack of choices does.
Arthur Tateishi ruhtra@turing.utoronto.ca

2623. CD40175 source ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 14:44:54 UTC
From: rvmeush@clark.net
Message-ID: <rvmeush-1009940944540001@rvmeush_ppp.clark.net>
Source record: 116313

I am trying to find a good inexpensive mailorder source for CD40175 parts. I have checked DigiKey and Jameco. Also I don't think they are carried by Mouser. Any info appreciated.

Also, is there a newsgroup dedicated to electronics in general?

Bob Meushaw

2624. Re: SWR meter suggestions?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 18:16:03 UTC
From: n921w1@pnet16.navy.mil
Message-ID: <CvxEqs.nr@nctams1.uucp>
Source record: 116316

Guy: Thres is a nice article in on old QST Dec 90 page 24 thu 26 that will probaly fit your needs. It's easy only have to come with a 0-100uA meter may find at ye old Radio shack near you..good luck with the project.
AH6IN Chuck Aloha

INET: n921w1@pnet16.navy.mil

2625. Re: Turns Counter-Bauman Sales

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-10 18:46:12 UTC
From: kchen@apple.com
Message-ID: <34sutk$d1n@apple.com>
Source record: 116314

ells22@aol.com (ELLS22) writes:

>I am trying to find a source for the "Groth" type turns counters. I got
>one from Bauman Sales in Itasca, Ill. a few years ago but the no longer
>appear to be in business. Any Ideas??

A year or three back, Radiokit had Groth, Millen, B&W counter dials.
I stll have a Groth dial, bought from them, in my "junkbox." I don't
see them advertise in the regular magazines anymore. The last phone
number I have for them is 603-635-2235.

73

Kok Chen, AA6TY kchen@apple.com
Apple Computer, Inc.

2626. 10 Meter Beacons

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 01:04:00 UTC
From: Stanley.Outlaw@capefear.com
Message-ID: <151.85.59@capefear.com>
Source record: 116360

I run a beacon on ten meters (KC4DPC/B 28.210 MHz) and would like to receive reports on this beacon if you hear it. I also am trying to keep an up to date 10 meter beacon list for distribution. So if you would send reports on any 10 meter beacon that you hear it sure would help the cause.
Thanks,
Stanley Outlaw / KC4DPC
Compuserve 72634,276
Fidonet 1:3628/7
INTERNET:Stanley.Outlaw@Capefear.com

73,

Stanley
* Evaluation copy of Silver Xpress. Day # 25
--- via Silver Xpress V4.01 [NR]

2627. 87C750 information available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 01:05:26 UTC
From: mcovingt@ai.uga.edu
Message-ID: <34tl4m$h6j@hobbes.cc.uga.edu>
Source record: 116315
Cross-posted to: sci.electronics,comp.robotics,alt.comp.hardware.homebuilt,rec.radio.amateur.homebrew

On ai.uga.edu, /pub/hardware, I have posted some information about the
Philips 87C750/1/2 microcontrollers, including an assembler, an update
for the software in the DS-750 kit, and a notebook of some of my own
early experiences and code. Responses welcome.

--
< Michael A. Covington, Assc Rsch Scientist, Artificial Intelligence Center >
< The University of Georgia, Athens, GA 30602-7415 USA mcovingt@ai.uga.edu >
< Unless specifically indicated, I am not speaking for the University. > <><
> "To 'see through' all things is the same as not to see them." -C.S. Lewis <

2628. CW keys for portable operation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 01:57:00 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <779248620snz@arkas.demon.co.uk>
Source record: 116317

OK - I'm not hombrewing a key, but I am looking to homebrew a "low parts count" portable transceiver. I wish to use cw, but am not interested in dragging the MK2 8 Amp key around with me on portable ops!

I've seen small keys on military gear ... but not at all in the surplus vendors that I have access to. (I think they get snapped up at a lightning-like rate once they appear in the surplus store!) I know of a good key that is part of the AN-PRC/VRC 47 set kit -it has a clip that allows the operator to sit down and fasten the key to his/her leg. It's slightly heavier than I would want (so's the 47 set!) and a smaller key would be good. The other alternative is a small dual paddle unit -the Bencher paddles are good in shacks but are too heavy and too nice to put in a ruchsack, I think.

Does anyone one know of manufacturers / retailers that sell small, lightweight keys / paddles that would be useful in my desired application?

Replies ok either here (rec.radio.amateur.homebrew) or email to michael@arkas.demon.co.uk

TIA & 73's

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2629. Re: MAKE.MONEY.FAST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 02:15:19 UTC
From: sct@po.cwru.edu
Message-ID: <34tp7n$gon@usenet.INS.CWRU.Edu>
Source record: 116318

Somewhere on the net, it's always September...

This "MAKE.MONEY.FAST" scam is a pyramid scheme and may well violate
various mail fraud statutes. They are prohibited by virtually all
the regional nets and local sites on the Internet. It is a BAD idea
to post it to the net -- you're being totally clueless if you think
it's (1) not illegal, (2) not forbidden by your site, and (3) not already
infamous on the net.

Stephen

--
Stephen Trier "Even if I wanted to practice my horn, it's at
sct@po.cwru.edu the bottom of the bathroom."
KG8IH - Dan Alt, hornist, during the Cleveland
Youth Wind Symphony European tour 1994

2630. [Q] Suggestions for remo

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 02:41:00 UTC
From: alan.wilensky@channel1.com
Message-ID: <40.2206.2425@channel1.com>
Source record: 116319

AT>OK, here's the situation:
AT>I have a 486 running Linux, zyxel modem, etc.
AT>I like to have my machine up all the time for my answering machine
AT>software, dialin access, etc.
AT>I'm somewhere else and I know there's a lightning storm heading
AT>towards my computer.

AT>What I'd like to be able to do:
AT>Switch off my machine remotely by having the computer cut power to
AT>its own power bar via a serial port or some other digital signal from
AT>my computer (ie after killing processes and syncing filesystems).

AT>The software side is trivial. Just have my voice/fax software run a
AT>script on some command. When the system halts or power goes down, the
AT>phone line will automatically go back on hook. And no, my machine is
AT>not a sentient lifeform! :-)

AT>Gravy:
AT>It would be nice to be able to specify a time duration after which
AT>the system will automatically revive itself. This is not critical and
AT>I figure I can work this out myself.

AT>QUESTION(S):
AT>Has someone built such a device?
AT>What sorts of relays/switches could I consider using?
AT>Would the bouncing of (say)relay contacts pose their own problems
AT>like spikes to the computer?
AT>Perhaps it's safer(regulation-wise) and simpler to just have a
AT>mechanical device with solenoids sit on top of the powerbar's rocker
AT>switch? It just doesn't seem elegant.
AT>What about other lightning-safe concerns?

AT>I'm not looking for something that will survive a direct hit on a
AT>house with the resultant charge arcing across all the open switches.
AT>Just something reasonably cheap, simple, and effective for the
AT>usual lightning-induced power fluctutations.

There is a little box that you can but that lets you call in by phone
and power off/on the computer. Sold by several companies. Look in Byte
Mag.

Alan Wilensky, N1SSO
abm@world.std.com
---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

2631. Re: CW keys for portable operation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 07:10:29 UTC
From: jerryg@teleport.com
Message-ID: <34uah5$a1s@kelly.teleport.com>
Source record: 116320

Michael J Dower (Michael@arkas.demon.co.uk) wrote:
: Does anyone one know of manufacturers / retailers that sell small,
: lightweight keys / paddles that would be useful in my desired application?

How about a reed relay taped to the inside surface of the top of the cabinet? Then tape a magnet to your finger or put a magnet inside your glove and tap away. Might be just the thing on really small rigs for backpacking, no wires, no connectors, contacts protected from the elements. I haven't tried it yet though.

Might implement a keyer paddle in a similar way with reed switches on two sides of a reasonably thin box, and magnets on thumb and forefinger.

If we really got carried away, could implement things like band switches and power level selection with reed relays also. Put a small piece of steel near these reed relays so any magnet placed over it will stick in place.

jerryg KE7ER Portland, Oregon USA

2632. Re: CD40175 source ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 08:58:38 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <779273918snz@lfheller.demon.co.uk>
Source record: 116321

In article <rvmeush-1009940944540001@rvmeush_ppp.clark.net>
rvmeush@clark.net "Robert V. Meushaw" writes:

[stuff deleted]

> Also, is there a newsgroup dedicated to electronics in general?
>
> Bob Meushaw
>

Yes, sci.electronics.

Leon
--
Leon Heller, G1HSM
E-mail: leon@lfheller.demon.co.uk
Tel: +44 (0)734 266679

2633. Re: CW keys for portable operation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 15:18:10 UTC
From: lindy@shell.portal.com
Message-ID: <34v73i$d7m@news1.shell>
Source record: 116322

In article <779248620snz@arkas.demon.co.uk>,
Michael J Dower <Michael@arkas.demon.co.uk> wrote:
>The other alternative is a
>small dual paddle unit -the Bencher paddles are good in shacks but are too
>heavy and too nice to put in a ruchsack, I think.
>
The heavy part of the Benchers is the base. You could remove the working
parts, and mount them on a piece of circuit board or something else lightweight
that you could strap to your leg.
73 de AK5N

--
Lindy Sisk lindy@shell.portal.com
The Internet Crocodile
Eater of Souls
"In CyberSpace, no one can hear you scream." (SM)

2634. Re: DSP on a SoundBlaster (was: FFTMORSE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 16:14:52 UTC
From: dbraun@ilx049.iil.intel.com
Message-ID: <34vadsINNtea@ilx018.iil.intel.com>
Source record: 116323

In article <778726482snx@djwhome.demon.co.uk>, david@djwhome.demon.co.uk (David Woolley) writes:
|> No. The problem is that the 8 bit SB cards cannot do simultaneous input
|> and output. By not being able to do real time processing, I meant that
|> you could read a signal in, process it and output it, but couldn't
|> output it as you were reading in.

From my reading about the SoundBlaster interface, it is not possible to use the DMA interface for simultaneous DAC and ADC. However, it looks like it ought to be possible to use direct programmed I/O to do it. But, maybe it works in theory but ends up sounding lousy.

Perhaps the SB16 is more flexible? Has anyone seen specs for programming the SB16? I've only seen specs for the 8-bit cards.

Doug Braun Intel Israel, Ltd. M/S: IDC-42 (new mailstop!)
Tel: 011-972-4-655069 dbraun@inside.intel.com

2635. Electronic Filter Synthesis Pgm.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 20:18:31 UTC
From: diviney@sky700.bwi.wec.com
Message-ID: <1994Sep11.201831.23719@tron.bwi.wec.com>
Source record: 116327
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
*****************************************************************
* *
* INTRODUCING 'FAISYN' FILTER SYNTHESIS PROGRAM FOR MSDOS *
* *
*****************************************************************

faisyn20.zip Electronic Filter Synthesis Program

FAISYN is a low cost, effective alternative to expensive commercial
filter synthesis packages. The program has be used to design lumped
element filters and diplexers from 10's of KHz to 1.5GHz and is the
result of many years experience in filter design. Designers know
that filter design is often an iterative process. Tedious number
grinding is sometimes required to optimize a design. FAISYN eases
the burden by allowing the designer to quickly synthesize a variety
of circuits that can be simulated and compared using your favorite
circuit simulator (FAISYN currently supports PSPICE-TM Microsim,
MMICAD-TM Optotek and TOUCHSTONE-TM HP/EESOF circuit formats).

Special Requirements: None

Shareware.

Faisyn was developed by:

Kevin Faison
Carriage House Engineering
16 W. Pleasant Hill Rd.
Owings Mills, MD 21117

You can get FAISYN20.ZIP from one of the following sources:

1. I have uploaded the program to the SIMTEL collection. It is
located there, and on it's mirrors in /pub/msdos/electric. I
usually have good luck with oak.oakland.edu

2. I uploaded it to watson.ee.ualberta.ca, it can be found in the
/pub/cookbook/softw/ibm directory.

--

*****************************************************************
* Tom Diviney diviney@sky700.bwi.wec.com *
* Westinghouse Electric Corp. (410)765-6606 voice *
*****************************************************************
```

2636. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 23:04:00 UTC
From: geoff.kennedy@woodybbs.com
Message-ID: <93.2094.7584.0NFB310C@woodybbs.com>
Source record: 116338

Whilst pondering the question of Re: xtal filters, Dana H. Myers
sayeth unto All:

> st.Sun.COM>
> Newsgroup: rec.radio.amateur.homebrew
> Organization: Sun Microcomputer Corporation

> In article 15967@rogue.com, dshalita@rogue.com (David Shalita)
> writes: >I also need to build xtal filters for a NE-602 project and
> this method >looks attractive. Need following filters:
> 10.7 mhz 55 khz bandwidth
> 10.7 mhz 15 khz bandwidth
>

> It isn't worth the trouble. A&A parts is always at the TRW swap meet
> selling 30KHz and 15KHz xtal filters for maybe $7/ea. You can probably
> do better if you go to a distributor, but there's likely to be a
> minimum order.

> The 55KHz wide filter may be a problem, but I bought a couple of 15KHz
> filters from A&A last year.

Spectrum International makes 40 KHz wide filters - the XF-107E.

The info I have is circa 1987, but they were running around $77 back
then.

SPECTRUM INTERNATIONAL INC.
P.O. Box 1084
Concord, Mass. 01742

(617) 263-2145

... A tree never hits an automobile except in self defense.
--- Blue Wave/Max v2.12
* Origin: Frog Hollow Port Moody BC 604-469-0264 (1:153/290)

2637. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-11 23:47:30 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cvzor7.DB5@cix.compulink.co.uk>
Source record: 116324

does anybody know where I can get a narrow CW filter for an FT101z?

I am in london England but don't mind mail order from anywhere!

oddjob@cix.compulink.co.uk

2638. RE: MAKE.MONEY.FAST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 00:38:54 UTC
From: raym@omnifest.uwm.edu
Message-ID: <3507uu$nqh@omnifest.uwm.edu>
Source record: 116328

Interesting scam. Unfortunately the unscrupulous scam artist puts his name
at number five on his mailing and the poor suckers who are down to 6 thru
10 never see a cent. You've got a better chance striking the lottery.
"There's a sucker born every minute" PT Barnum
WB9ZIQ
###

2639. A call for documents...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 03:36:20 UTC
From: hindman@netcom.com
Message-ID: <hindmanCvzzCL.9Bx@netcom.com>
Source record: 116330
Cross-posted to: rec.radio.amateur.homebrew,sci.agriculture,sci.electronics.cad,sci.energy,sci.math,sci.med.psychobiology

A call for documents...

Interact is soliciting for the submission of computer-readable documents of all types for addition to the Interact On-line Information System.

All submitted documents are immediately cataloged by company name, author, title, Dewy Decimal Number (if applicable), and several key words. They become instantly available for down-load to anyone with a modem, 24 hours a day at no charge to the author.

Interact pays a 50% royalty to authors who have their documents down-loaded. The price of the down-load is determined by the author at the time of the document's submission.

The Interact On-line Information System is the only public access server that allows anyone to publish documents free of charge and receive monthly royalty payments.

Interact is dedicated to providing on-line publishing services to all writers, composers, painters, photographers, software developers, and information providers free of charge.

To learn more about how to publish your documents, use your modem to call 1-714-378-4704 (8 N 1).

2640. IF YOU WERE THINKING ABOUT MAKE.MONEY.FAST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 05:20:18 UTC
From: MCCLUREJD%CS32@cadetmail.usafa.af.mil
Message-ID: <MCCLUREJD%CS32.150@cadetmail.usafa.af.mil>
Source record: 116326

This is just a message to reveal what I beleive to be an internet scam that has caught many net newbies unaware (including me) and to apologize to the users of news groups where I may have posted.
It is usually under the subject heading MAKE.MONEY.FAST. The message says it is a legal mail list. I don't know if it is legal or not but it is in severe bad taste. It is also a misuse of a government sponsored internet account.
So if any of you see a message of the above description, please let the issuer of it know what is going on. They are probably relatively new to the internet news groups or they would have some clue about what the message is.
If any of you have already added your name to this thing, the best thing to do would be to let others know that it is in poor taste and to apologize to the places that it was posted.
To everybody else, my advise is DONT BE DUPED!
Josh McClure
Cadet, USAFA

2641. AR-2500

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 05:45:39 UTC
From: droy@netcom.com
Message-ID: <droyCw05C6.FnC@netcom.com>
Source record: 116325

I just got a used AR-2500 scanner and I am looking for software to control the radio via the rs-232 port. I AM NOT A PROGRAMMER by any stretch of the imagination. I am a truck driver so if you have such a program I can trade you.... well I could give you a ride in my truck!
Please respond here or to droy@netcom.com
Tnx. Dave

--
- -

Thanks to all those who have:
And to those who have not, remember
Please Send Money To:
Dave Roy
100 Harbor Blvd
Space # 16
Belmont, CA 94002

Ham Radio: KB6HLR . An EXPERIMENTAL No Code Extra
Packett Radio: kb6hlr @ n6qmy.#nocal.ca.usa.na
droy@netcom.com
" _ .... ._ _ ... ._ ._.. ._.. ..._. ___ ._.. _._ ... "

2642. 1200 and 10000 MHz low-noise GaAsFET or GaAlAsFET

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 10:38:11 UTC
From: elendir@enst.fr
Message-ID: <351b2j$51g@cismsun.univ-lyon1.fr>
Source record: 116329

Hi !

I am working on two projects at the time : the first involves the design of a 23 cm phone repeater (6 MHz shift), and the second is the design of a 10 GHz BLU transverter. For both project, I need some data about low-noise FETs, but I lack it.
Does anybody have any idea about what kind of device I should use ? I don't care about price, as long as it does not reach $20 per part.

Thanks and 73 !

Vincent

--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2643. EME amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 13:05:31 UTC
From: klimas%uhavax.dnet@ipgate.hartford.EDU
Message-ID: <9409121305.AA10522@ipgate.hartford.edu>
Source record: 116333

```
Harry, W3IIT wrote:
>To: ham-homebrew@ucsd.edu
>I've heard that Russian tubes are available. Does anyone have info
>(costs, types, where) in the US?
>73, Harry, W3IIT
>hbrown@resd.vf.ge.com
------------------------------
try: Svetlana Electron Devices, Inc. > low cost 4CX800A
ATTN: George Badger, W6TC > contact George
3000 Alpine Rd. > for pricing.
Portola Valley, CA 94028 >

_\\///_
co-founder: (' O O ') North East Weak Signal group, ARRL affil.
---------------ooO-(_)-Ooo-------------------------------------------
| 73 de Ron WZ1V, email: klimas%uhavax.dnet@ipgate.hartford.edu |
| Grid FN31mp BBS: 203-768-4758 (weeknights/weekends only) |
------------------------------------------------------------------------
```

2644. Re: CW keys for portable operation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 13:28:14 UTC
From: rdewan@uhura.cc.rochester.edu
Message-ID: <1994Sep12.132814.11686@galileo.cc.rochester.edu>
Source record: 116331

In article <779248620snz@arkas.demon.co.uk> Michael@arkas.demon.co.uk writes:
>OK - I'm not hombrewing a key, but I am looking to homebrew a "low parts count"
>portable transceiver. I wish to use cw, but am not interested in dragging the
>MK2 8 Amp key around with me on portable ops!
>
>I've seen small keys on military gear ... but not at all in the surplus vendors
>that I have access to. (I think they get snapped up at a lightning-like rate
>once they appear in the surplus store!) I know of a good key that is part of
>the AN-PRC/VRC 47 set kit -it has a clip that allows the operator to sit down
>and fasten the key to his/her leg. It's slightly heavier than I would want
>(so's the 47 set!) and a smaller key would be good. The other alternative is a
>small dual paddle unit -the Bencher paddles are good in shacks but are too
>heavy and too nice to put in a ruchsack, I think.
>
>Does anyone one know of manufacturers / retailers that sell small, lightweight
>keys / paddles that would be useful in my desired application?
>
>Replies ok either here (rec.radio.amateur.homebrew) or email to
>michael@arkas.demon.co.uk
>
I used a j45 (war surplus), a leg clamp with a j38 straight key
mounted on it for a while. It is quite light and a pleasure to use.
Fair Radio Sales of Lima, Ohio has them for $30 a piece.

Lately, I replaced the j38 on the leg clamp with a small aluminum
box abt 1"x1 1/2" x 2 1/2" containing the cmos super keyer ii (see
arrl hand book for a description) and a tiny set of iambic paddles
called the Einbau Wabbler. The paddles are hand made by a master
machinist in Germany and imported into US by Electro Switch of
Atlanta, Georgia. You can also order them from Ham Radio Outlet
in Atlanta. HRO obtains them from Vern (the owner of electroswitch).
In any case, this combination works extremely well for mobile operation.
I have it clamped on my thigh where the hand rests naturally. It
is also close to the gear shift lever!

Rajiv
aa9ch/2

2645. RE 100 MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 14:21:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E7464A3@msmail.uthscsa.edu>
Source record: 116332

in digest 269 Fred (K4DII) writes:

>In article <2E6F304A@msmail.uthscsa.edu>, MUENZLERK@uthscsa.EDU (Muenzler,
>Kevin) wrote:
>> If you just need a 100MHz pulse rate, you can use any of the
>> 74Fxx or 74ALSxx series chips. They should have no problem
>> running at 100MHz. All you would need is the 100 MHz
>> crystal.
>
>Kevin-
>
>A 100 MHz crystal is most likely used in a fifth or seventh overtone
>mode. How do you ensure that the crystal oscillates at the correct
>overtone, instead of the fundamental or an "easier" overtone?
>
>73, Fred, K4DII

Well Fred,
I didn't really consider that. You are probably right. I guess one could use an overtone oscillator or harmonic oscillator, amplify the output to a level that TTL would see and then run it through a TTL gate such as 74ALS00 or 74ALS04 for shaping.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff, faculty, administration, or lab animals (woof!) of The University of Texas Health Science Center at San Antonio or anyone else who is not me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
****

2646. Re: Ham-Homebrew Digest V94 #270

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 19:38:48 UTC
From: Dale_Croft@comsys.rockwell.COM
Message-ID: <9408127794.AA779402328@SmtpSend.comsys.rockwell.com>
Source record: 116335

Subject: Freq. Counter Problem
ref ham-homebrew digest v94-*270

> I have an older model tube general
> receiver with analog tuning. To improve my tuning accuracy I
> hooked up a frequency counter by taking a tap from the oscillator
> plate line using a 1 uf 1 kv capacitor. The lead was sent to the
> frequency meter and the ground of the meter was connected to the
> ground of the radio. This arrangement works exceptionally well
> (7 decimal place accuracy, as long as I remember to subtract the
> oscillator's frequency from the meter reading) except on 3.3 to
> 5.6 MHz, where I get no reading on the meter. However the
> oscillator is obviously working since I tune in stations
> effectively and the analog frequency reading appears to
> correspond to the stations' announced frequencies.

> Could anyone hazard a guess as to why the anomaly for 3.3 to 5.6
> MHz?

> Thanks for any suggestions.

> Regards,
> Jack

Since the signal coupled into the freq counter is frequency
dependent You are probably see the practical proof of ac transfer
thru a capacitor! You have less drive for the freq counter as
the frequencie is dropped.
****
73, K5VMU ,Plano,TX | Opnions expressed are mine alone: Rockwell
dale_croft@comsys.rockwell.com | does not acknoledge nor endorse them!
****

2647. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 21:41:35 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cw1DLB.B2q@cix.compulink.co.uk>
Source record: 116337

I am after a 250Hz CW filter for an FT101Z, and any improved mixer in the reciever (To fix 40m intermodulation distortion).

Some helpful person has suggested I try International Radio and Computers in Florida, who apparently, sell crystal
filters for many old rigs, but unfortunatly had not 'phone number etc.

I telephoned Amateur Electronics Supply, Good Hope Rd, MilWaulkee, who suggested I try the Foxtrot-Tango Club, Also in Florida, who manufacture filters for old radios.

Does anybody have e-mail, Voice or Fax numbers for either of these

oddjob@cix.compulink.co.uk

2648. Old BiPolar High Voltage Xstr?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-12 23:24:26 UTC
From: tjenkins@pnet16.navy.mil
Message-ID: <Cw1ICq.Et@nctams1.uucp>
Source record: 116334

I've several of these marked: 'AT5058', but my local source can't cross 'em.
Are they perhaps the same as 2N5058, or ECG/NTE 154?

--Tom

INET: tjenkins@pnet16.navy.mil

2649. Re: 100MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 04:10:36 UTC
From: rheiss@harp.aix.calpoly.edu
Message-ID: <1994Sep13.041036.164129@zeus.aix.calpoly.edu>
Source record: 116336

In article <2E6F304A@msmail.uthscsa.edu> MUENZLERK@uthscsa.EDU (Muenzler, Kevin) writes:
>If you just need a 100MHz pulse rate, you can use any of the
>74Fxx or 74ALSxx series chips. They should have no problem
>running at 100MHz. All you would need is the 100 MHz
>crystal. You can use the 74ALS00 (quad nand gate) chip
>and the 100MHz crystal as an oscillator.

All you need ... no problem? ;-)

See also comp.sys.mac.hardware and comp.sys.powerpc on the subject
of crystal oscillators. To help kids hot-rod their computers (an
application I do NOT recommend) there are several retail suppliers.

2650. MILLIWATT reprints soon

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 11:21:44 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Sep13.072144.4254@wb3ffv.wb3ffv.ampr.org>
Source record: 116340

\MILLIWATT REPRINTS ON THE WAY--PROBABLY

Sorry to bother the homebrew newsgroup with this one--this is for the benefit of the many QRPers who recently unsubscribed to the QRP mailing list when it changed hosts and lost the digest capability. I believe many of you are still here on the homebrew newsgroup (and there may also be others who are interested in this).

I'm still not taking orders on my non-profit reprinting (photocopying) of The Milliwatt ("National Journal of QRPp"), but I'm taking another poll, this time to see who is SERIOUSLY interested--my partner is negotiating with the printer, who raised his estimate sharply after Partner showed him the material to be copied. With the higher price the printer is now quoting, it looks like we might have to charge up to $25 in the US/Canada, UPS-paid. (The higher quote is still a bit cheaper than I could have done it at Office Depot.) If you're still interested, let me know; we need to get an idea of how many copies to order, although this won't obligate you in any way--you can change your mind later and back out. (This isn't a small document, either; it includes the entire 33 issues of the Milliwatt, and that comes out to 180 sheets of 8 1/2 X 11 paper, printed on both sides.)

For those who've never heard of it, The Milliwatt was the pioneer QRP journal in the US, running from 1970 to 1975. (The QRP Quarterly in those days was not what we'd call a QRP journal today--that was back when the QRP ARCI had the 100 watt limit and was not devoted to "real QRP.") The Milliwatt was started jointly by me and (primarily) Adrian Weiss, W0RSP, although I ran off after 4 issues to join the Air Force (much better than being drafted and going to Viet Nam!). I was publishing the precursor, a bimonthly newsletter which contained a QRP section. He found out about it, came on board and quickly convinced me to convert to a 100% QRP journal, took over the printing and bulk of the editorial responsibilities, and the rest is QRP history. Although I had a seminal role, W0RSP did the vast majority of the work and deserves 99.9% of the credit for it all.

If you want a copy of the notes I put on the QRP list let me know and I'll e-mail them, although this posting contains most of the detail. (Again, this is a non-profit project, as was my earlier reprinting in 1992; any excess money after expenses are covered will be donated to some small but deserving regional or local QRP club to be determined later--and the Maryland Milliwatts are specifically excluded!)

Again, let me know by e-mail if you are still interested at this price; I'm not taking orders just yet, but will let you know if we go

ahead with the project.

73 de WA8MCQ@hambbs.wb3ffv.ampr.org

2651. Service Manual Needed for MX-5000 Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 13:38:40 UTC
From: jernandez@pbs.org
Message-ID: <jernandez-130994083840@jernandez.pbs.org>
Source record: 116219

I would like to get a copy of the service manual for the Regency MX-5000 scanner. This radio is about 10 years old and no longer mage by Regency(now Uniden). Can someone direct me to a good source of out of print manuals? Or is there a SAM's PhotoFacts available for the radio?

TNX
John

--
John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

"My Favorite Location On the Pennsy" MP-46.8 Plainsboro, NJ

E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

2652. Re: Ham-Homebrew Digest V94 #272

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 14:32:43 UTC
From: Scott.Mickelbank@analog.COM
Message-ID: <9409131432.AA16856@nwd2sun1.analog.com>
Source record: 116342

```
unsubscribe scott.mickelbank@analog.com
```

2653. Re: 100 MHz TTL Clock

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 15:32:58 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <10316@uugate.wa7slg.ampr.org>
Source record: 116344

Getting overtone gate-oscillators to run can be kind of a pain, at times...

Certainly, you are not likely to find fundamental-mode crystals for over
30 MHz in many places (they *do* exist...)

Perhaps the easiest thing to do (what I would do...) is open up the
electronics catalog (I just opened up a jameco catalog) and order
a 100 MHz TTL "canned" oscillator... $4.95, PN 76857.

Now, if you *do* want to build your own oscillator, then you can get
a crystal (custom: >= $11.00) and kludge it into a tank circuit to
force it to ring on the desired overtone, all possibly using an
F or S series gate (or one of those CMOS devices with the goofy
pinout...) and you'll be done... You'll certainly learn more that way:-)

<Clint>

ka7oei@uugate.wa7slg.ampr.org

2654. Re: Circuit Board Specialists of Pueblo, CO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 16:51:43 UTC
From: zlau@arrl.org
Message-ID: <1994Sep13.165143.14175@arrl.org>
Source record: 116339

Richard F. Lukes (rflukes@silver.cs.umanitoba.ca) wrote:
: Does anyone know if Circuit Board Specialists of Pueblo, CO are
: still in business? They used to make printed circuit boards for
: many of the projects in QST magazine.

He informed us that he closed up shop.

You may be able to get boards from FAR Circuits
18N640 Field Ct
Dundee IL 60118

Fred has a daytime job to pay the bills, so I think he only
takes mail orders (no secretary to take phone orders)
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2655. Homemade antenna tap for instruments?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 17:54:17 UTC
From: jerald@wrs.com
Message-ID: <Cw2xqI.AKM@wrs.com>
Source record: 116341

I would like to tap into my antenna coax and hook my
frequency counter and/or the oscilloscope to watch
my output signal.

AES has Bird taps at $80.00 which strikes me as being
a little high. (no doubt the product is worthwile but
for what I want to do...)

Is there a simple way to have a permanent tap off the
coax that I can feed to my instruments?

I've thought about taking a few turns of wire around
the outside of the coax and feeding that to the
counter/scope. Though I worry that the
signal level might be too great.

Someone posted here about a tap where they attached
to the shield and a 1 meg resistor to the center
conductor (I think), but I was asleep when that one
went by. If some kind soul still has that post, I
would be grateful.

Anybody have any other ideas?

Many thanks for your time,
73 de KC6RTO.

--
Jerald R. Pendleton Email: jerald@wrs.com, Personal Email: jrpend@netcom.com
The preceeding message represents only the opinon of the author. This
do not represent the opinions/positions of Wind River Systems, my mother,
my wife or my poodle.

2656. Difference between 3SK73GR and 3SK73Y

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 18:00:55 UTC
From: hpaik@silver.sdsmt.edu
Message-ID: <hpaik.94.2E75E8D7@silver.sdsmt.edu>
Source record: 116343

Can any one tell me the difference between 3SKGR and 3SK73Y ?
I think one has higher gm than the other, but I have no idea.

2657. Re: Ham-Homebrew Digest V94 #270

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 20:36:29 UTC
From: jmccarty@spd.dsccc.com
Message-ID: <3552gd$bh8@sun001.dsccc.com>
Source record: 116345

In article <9408127794.AA779402328@smtpsend.comsys.rockwell.com>,
<Dale_Croft@comsys.rockwell.COM> wrote:
)
)Subject: Freq. Counter Problem
)ref ham-homebrew digest v94-*270

[stuff deleted about freq. counter not able to count local oscillator
from 3.3 to 5.6 MHz through a 1 uF capacitor, but ok on freq's above
this]

I doubt that. At 3 MHz the reactance of a 1 uF capacitor is 0.05 Ohms.

Mike
---
char *p="char *p=%c%s%c;main(){printf(p,34,p,34);}";main(){printf(p,34,p,34);}

2658. Re: Wanted: RF Transistor 2SC1947

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-13 21:51:40 UTC
From: zlau@arrl.org
Message-ID: <1994Sep13.215140.22178@arrl.org>
Source record: 116346
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Bob Johnson WB4JCM
UF IFAS CLIMATOLOGY LABORATORY (climatol@gnv.ifas.ufl.edu) wrote:
: I need a 2SC1947, which according to my cross-ref is equivalent to an
: ECG 341 (or NTE 341). This is a 4-watt rf power transistor that has
: an oddball lead arrangement and the emitter tied to the case. This
: makes it very difficult to substitute a more common transistor.

Actually, the MRF 237 is similar and sort of common (pair of them used
in Heathkit HW-9s). It might work (if it doesn't oscillate)

RF Parts 1-800-737-2787 has them in their catalog.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2659. ** FLEA at MIT ** Sunday September 18th Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 03:39:04 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <355r8o$dra@senator-bedfellow.MIT.EDU>
Source record: 116349
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

This comming Sunday.....

Now TWICE the number of outdoor Tailgate spaces are available...

********* $1 buyers discount with hardcopy of this notice ********

COMPUTERS - ELECTRONICS - HAM RADIO - COMPUTERS - ELECTRONICS

FLEA all SUMMER at MIT
September 18th, 1994
9AM-2PM

Come to the city for a great flea - plenty of free parking.

MIT's electronics and ham radio flea will take
place on the third Sunday of each month this summer,
April thru October.

There is tailgate space for over 600 sellers and
free, off-street parking for >1000 cars!

Buyers admission is $2 (you get $1 off if
you're lucky enough to have a copy of our ad)
and sellers spaces are $10.00-each at the gate.

The flea will be held at the corner of Albany and
Main streets in Cambridge; right in the Kendall
Square area from 9AM to 2PM, with sellers set-up
time starting at 7AM.

!! RAIN or SHINE !! Have no fear of rain, a covered
tailgate area is available for all sellers (6'8" clearance).

Talk-in: 146.52 and W1XM/R-449.725/444.725 (PL 114.8/2A).

Sponsors: MIT Electronics Research Society
MIT UHF Repeater Association (W1XM)
MIT Radio Society (W1MX)
Harvard Wireless Club (W1AF)

For more info / advanced reservations 617 253 3776

********** $1 buyers discount with hard copy of this notice ***********

****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754

****

2660. PC Keyboards output???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 04:09:02 UTC
From: marcuss@osuunx.ucc.okstate.edu
Message-ID: <Cw3q73.K9C@osuunx.ucc.okstate.edu>
Source record: 116357

```
~
Hello!
Does anyone know the standard output data format used by the common PC
keyboard?? I want to connect a PC keyboard to my 68000 project, but I
don't know much about the keyboards. I assume it's asynchronous, but
don't know anything else about it!
I am very gratefull to anyone that can provide me with this info! :)
Thankyou,
Marcus S. Sutliff

--
**> marcuss@osuunx.ucc.okstate.edu <**
**> Oklahoma State University Electronics Engineering Technology <**
**> Member of IEEE Amateur Radio Call Sign <**
**> NRA Life Member N5WRH <**
```

2661. Enclosures For Xmitters & Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 04:33:00 UTC
From: Timothy.Cadigan@f239.n109.z1.fidonet.org
Message-ID: <7d0_9409140114@blkcat.fidonet.org>
Source record: 116353

Stephen, I saw your note on a local bbs about the
extruded cases and the soon to be 2m ppl exciter. If
you have these goodies printed up in a catalog
or advertisment letter I would love to get one.
Thanks! Tim WC1f
Fr. Timothy Cadigan, SJ
Jesuit Community
Georgetown University
Wash. DC 20057

Fidonet: Timothy Cadigan 1:109/239
Internet: Timothy.Cadigan@f239.n109.z1.fidonet.org

2662. Milliwatt Reprints Soon

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 04:53:00 UTC
From: Timothy.Cadigan@f239.n109.z1.fidonet.org
Message-ID: <7d1_9409140114@blkcat.fidonet.org>
Source record: 116354

Saw your msg on the Frequency Forum BBS, I would
love to get my hands on a set of back issues of the
Milliwatt. Put me down for one! Thanks for the effort
of making these available.
731 WC1F
Fr. Tim Cadigan, SJ
Jesuit Community
Georgetown University
Wash, DC 20057

Fidonet: Timothy Cadigan 1:109/239
Internet: Timothy.Cadigan@f239.n109.z1.fidonet.org

2663. Re: More on Receivers that Radiate

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 06:55:42 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cw3xwv.D1K@cix.compulink.co.uk>
Source record: 116358

Well I would like to read some of these books you've been quoting from (I have spycatcher) but not the rest. How about posting list with aurthors, publishers and ISBN numbers too.

oddjob@cix.compulink.co.uk

2664. Re: Difference between 3SK73GR and 3SK73Y

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 08:09:29 UTC
From: jf7wex@jf7wex.sdj.miyagi.prug.or.jp
Message-ID: <JF7WEX.94Sep14170829@tumtum.jf7wex.sdj.miyagi.prug.or.jp>
Source record: 116362

In article <hpaik.94.2E75E8D7@silver.sdsmt.edu> hpaik@silver.sdsmt.edu (H. Paik) writes:

Can any one tell me the difference between 3SKGR and 3SK73Y ?
I think one has higher gm than the other, but I have no idea.

Y/GR suffix indicates IDSS for FET (and hFE for bipolar Tr).
(Y is 3-7 mA, GR is 6-14 mA for 3SK73)
Toshiba adds R/O/Y/GR/BL suffix for such ranking.
--
Ryuji Suzuki JF7WEX

2665. HP & Marconi microwave power meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 09:13:37 UTC
From: agodwin@acorn.co.uk
Message-ID: <356es1$qcp@acorn.acorn.co.uk>
Source record: 116365
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew

I have a Marconi-Sanders/TFT 6460/1 power meter, which unfortunately has a blown measurement head : I understand this is a common problem. A replacement is pretty expensive : just the element is #238 from Marconi, and a second-hand head about #100. Very few seem to appear on the amateur market.

However, the heads for the HP meter (HP432A ??) are much more easily available - I've seen guaranteed ones for #25 and unknown ones for #5. Of course, the meters themselves (and the head cables) are pretty hard to find ..

Are the actual sensor elements in these heads similar ? I want to know if I can adapt the HP heads to suit my Marconi meter (perhaps with some changes to the meter), either by building an interface box or by transplanting the measurement cavity into my broken power head.

The Marconi heads are nominally 200 ohm, with a thermistor for temperature compensation and an efficency correction pot mounted on the head itself - I appreciate that the HP meters have the correction control on the meter.

Great accuracy is not particularly important - I could probably get access to equipment to perform some sort of calibration and in any case I'd find relative measurements alone useful if the absolute measurement was OK to an order of magnitude.

I'd also appreciate comments on how these things work : they're usually referred to as thermistor heads, so I assumed that the meter actually measures resistance. However, the manual indicates that it measures voltage, and there's no current source to the sensor, just a small offset voltage that's used for zero setting. Is the same true for the HP meter ?

-adrian

(# above is used to represent pounds sterling, about $1.50).

2666. Re: SWR meter suggestions?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 12:01:42 UTC
From: agodwin@acorn.co.uk
Message-ID: <356on6$1bu@acorn.acorn.co.uk>
Source record: 116347

In article <34qf9e$l2q@usenet.INS.CWRU.Edu>,
Guy Derose <gxd@po.CWRU.Edu> wrote:
>
>Hello,
>I am still very new to amateur radio, but I really like to build
>circuits. Does anyone have a schematic for a home-built SWR meter
>for 2M? I haven't had any success finding one in any of the ARRL
>publications I've been able to find.

The RSGB's VHF handbook has a number of designs in it for VHF and UHF :
you can get that from the ARRL, who seem to agree it's a useful publication.

-adrian

2667. Rebuilding a satellite receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 13:56:50 UTC
From: leikvoll@hsr.no
Message-ID: <356vf2$glk@marton.hsr.no>
Source record: 116348

Is there someone here who has got equipment to rebuild a satellite
tuner to cover the band up to 2Ghz (input). The receiver can now go
up to about 1.65, and a second switchable band would be great.
I'm willing to pay someone to do this, as I want to do this on several
receivers.
I don't want a downconverter, just another (or alterable) oscillator.
I think the current oscillator runs on 480Mhz.

-Morten Leikvoll / leikvoll@hsr.no (Is it short enough?)

2668. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 14:52:05 UTC
From: dara@physics.att.com
Message-ID: <Cw4Jyu.5z4@nntpa.cb.att.com>
Source record: 116361

Greg Dolkas (greg@core.rose.hp.com) wrote:

: All this talk about matching 75 ohms to a typical ham tranceiver reminds me of
: a question I had... BTW, most I have asked this suggest I just try it and see
: what happens :-)

: Your thoughts?

: Greg KD6KGW

Greg: I have 3 dipoles (20,17,15 meters) which are fed with
a single coax: RG59 75 ohms. The swr in the cw portions of
15 and 20 is low (less than 1.2:1 at the low end of the bands) and I can use the 20 meter
dipole for cw and rtty without a tuner. The swr
indicator in my TS440 reads low swr and the rig puts out 100 watts.
These dipoles do quite well on the air.
Since they work well, I haven't lost any sleep about the accuracy
of my 50 ohm swr bridge.

Shel WA2UBK

2669. Osc. for 2M remote base, HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 17:33:26 UTC
From: bmcclure@olie.wvitcoe.wvnet.edu
Message-ID: <1994Sep14.133327.11389@wvnvms>
Source record: 116364

This is my first post, so forgive any screw-ups

looking for a schematic of a oscillator for 2M that can be controlled
via BCD, RS-232, binary, etc. for use as a 2M remote base/link system

what I am trying to do is, i live in between two very tall hill and
can't hit the repeaters just on the other side, so i am building a link
and need to be able to control the TX and RX freq with DTMF
i already have the DTMF decoder built and part of the controller
I just need an OSC that can be controlled via the "computer"(controller)

thanks in advance
any info would be helpful

Brian McClure N8PQI
email: bmcclure @ olie.wvitcoe.wvnet.edu
q

2670. Re: New walkmans have AM-Wide

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 19:17:55 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <357i93$98i@ohlone.kn.PacBell.COM>
Source record: 116350
Cross-posted to: alt.radio.pirate,rec.radio.amateur.homebrew

Chris Lyons (clyons@slipn.com) wrote:
: krmurray@vnet.ibm.com.ca writes:
: > I was just shopping around for a new walkman, and lo-and-behold...
: > some of the new Sony and Aiwa models have an AM band that goes
: > up beyond 1700kHz (hard to tell how high though, they were all
: > analog tuners). They also had the new snazzy >AM Wide< logo.
: > Keith

: What exactly is AM Wide, anyway?

My guess is it's like the VHS term that's used for a system or for an improved version of something. Something that sets a standard so that there won't be any one-up-manship in the industry. Probably sanctioned by gov't entities.

I noticed that Radio Shaft is selling their portables with the wider bandwidth. Think about this, though. It's hard to get any analog AM radio to track over the full 3:1 tuning range from 550 to 1600 KHz. Now the FCC has given more bandwidth and it will probably mean that all those cheap radios will have worse than average performance on the edges of the band because of it.

And there are a zillion old radios that are out there that can't receive any stations in the new band addition. So if the broadcaster takes a channel in there, he's losing listeners. I read somewhere that the FCC was going to let some broadcasters simulcast so that they wouldn't be in some vast wasteland. I don't remember if that was on the fcc.gov FTP site or where.

--

2671. How to Breadboard

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 20:09:04 UTC
From: dmarsh@us.oracle.com
Message-ID: <357l90$j09@dcsun4.us.oracle.com>
Source record: 116363

Doug :~}


```
------------------------.------------.------------.------------------------
. Douglas E. Marsh | | Oracle Consulting .
. (513) 629-2229 V-Mail | | 312 Elm Street .
. (513) 651-4444 Office | Your Message Here | Suite 1525 .
. (513) 651-4463 Fax | | Cincinnati, OH 45202 .
. | | .
. InterNet Address .--------------------------. Amateur Radio Call Sign.
. dmarsh@us.oracle.com | Too much is never enough. | N8TUT .
_________________________._____________________________._________________________
```

2672. Re: [Q] Suggestions for remote powerdown?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 21:37:44 UTC
From: philip@wv.mentorg.com
Message-ID: <357qf8$f2a@hpbab.mentorg.com>
Source record: 116351
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <1994Sep9.230130.24018@jarvis.cs.toronto.edu>, ruhtra@turing.toronto.edu (Arthur Tateishi) writes:

> OK, here's the situation:
> I have a 486 running Linux, zyxel modem, etc.
> I like to have my machine up all the time for my answering machine
> software, dialin access, etc.
> I'm somewhere else and I know there's a lightning storm heading
> towards my computer.
>
> What I'd like to be able to do:
> Switch off my machine remotely by having the computer cut power to its
> own power bar via a serial port or some other digital signal from my
> computer (ie after killing processes and syncing filesystems).
>
> The software side is trivial. Just have my voice/fax software run a
> script on some command. When the system halts or power goes down, the
> phone line will automatically go back on hook. And no, my machine is
> not a sentient lifeform! :-)
>
> Gravy:
> It would be nice to be able to specify a time duration after which the
> system will automatically revive itself. This is not critical and I
> figure I can work this out myself.
>
> QUESTION(S):
> Has someone built such a device?
> What sorts of relays/switches could I consider using?
> Would the bouncing of (say)relay contacts pose their own problems like
> spikes to the computer?
> Perhaps it's safer(regulation-wise) and simpler to just have a
> mechanical device with solenoids sit on top of the powerbar's rocker
> switch? It just doesn't seem elegant.
> What about other lightning-safe concerns?

I'm not absolutely certain exactly what you are asking ... but, here are some answers anyway :-)

There is no difference in contact bounce and spikes in switching with a relay, or with the cheap nasty switches that PC manufacturers use.

How to control the relay ? well, you would have to give up a serial port, but just open the port, and use the DTR line to signal the switch box.

The switch box can be something a simple as a 555 timer, driving a (medium) power transistor, driving the supply relay. Kick the timer with DTR line, and relay goes off for a pre-determined time.

How much do you want to spend ??
Some discharge tubes connected across the supply line and telephone line, coupled with a cheapo UPS will probably give you all the protection that you need, for a couple of hundred dollars (and no interruptions of service).

Philip

2673. Micor Compa-station for 6m?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 21:46:03 UTC
From: genew@teleport.com
Message-ID: <357qur$op2@sandra.teleport.com>
Source record: 116352
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

For Sale/Trade:

Motorola "Micor Compa-Station", 100W 4-channel business band (47 MHz)
base station, continuous duty rated, suitable for use as 6 Meter repeater.

$150/offer/trade for 2M vertical or 2M mobile transceiver. <<503-655-6410>>

73's
Gene
KB7WIP

2674. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 22:30:12 UTC
From: greg@core.rose.hp.com
Message-ID: <Cw556C.Gvu@icon.rose.hp.com>
Source record: 116355

Greg Dolkas (greg@core.rose.hp.com) wrote:

: All this talk about matching 75 ohms to a typical ham tranceiver reminds me of
: a question I had... BTW, most I have asked this suggest I just try it and see
: what happens :-)

For the curious... an update.

I took the advice of just trying it, and the results weren't too bad.

The dipole actually is 3 dipoles spaced 1.5" apart, and fed with a single
run of RG-8M coax. The dipoles are cut for 40, 20, and 10 meters. Each
required a little pruning to get tuned up, and all work reasonably well.
The 40 meter part also works so-so on 15 meters (it's a little short),
and also on 6 meters. The 10 meter band is so wide that I can't get a perfect
match across the whole thing, but it's under 2:1 for about half of it, and
the tuner takes care of the rest. 20 works the best; I was able to make
a couple of contacts without really trying much during the /125 event a couple
of weekends ago. 40 meters is a little worrysome. The indicated SWR is about
1.2:1 direct into the coax (no tuner), but I seem to have RF everywhere. The
feed line is some 75' long (a tad over 1/2 wavelength), which you'd think
should make things work best. I put a half-dozen turns of the feedline at
the feedpoint as a choke, but it's still there. Suggestions are welcome.

Anyway, thanks for all the suggestions,

Greg KD6KGW/AG

2675. Re: xtal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-14 22:47:24 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <357uhs$jr8@bmerha64.bnr.ca>
Source record: 116356

Does anyone have the address/phone number for A & A parts
What is the TRW swap meet?

Bill Kirkland

2676. Re: Osc. for 2M remote base, HELP

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 01:02:46 UTC
From: zlau@arrl.org
Message-ID: <1994Sep15.010246.22582@arrl.org>
Source record: 116359

Brian McClure N8PQI (bmcclure@olie.wvitcoe.wvnet.edu) wrote:

: looking for a schematic of a oscillator for 2M that can be controlled
: via BCD, RS-232, binary, etc. for use as a 2M remote base/link system

: what I am trying to do is, i live in between two very tall hill and
: can't hit the repeaters just on the other side, so i am building a link
: and need to be able to control the TX and RX freq with DTMF
: i already have the DTMF decoder built and part of the controller
: I just need an OSC that can be controlled via the "computer"(controller)

Much of what you need is in an article published by Lee Snook in the 1988 to 1990 ARRL Handbook--A computer controlled Shortwave Converter. All the basic building blocks, VCO, triple loop synthesizer, and digital interface are described.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2677. Re: [Q] Suggestions for remote powerdown?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 02:48:42 UTC
From: jablow@jablow.overleaf.com
Message-ID: <779597322.32snx@jablow.overleaf.com>
Source record: 116226

>|>
>|> What I'd like to be able to do:
>|> Switch off my machine remotely by having the computer cut power to its
>|> own power bar via a serial port or some other digital signal from my
>|> computer (ie after killing processes and syncing filesystems).

Get an X-10 appliance module or wall switch. Then get the telephone remote.
When you want to shut it down just call in and power off (or on) the
appropriate x-10 address. You can also controll other things in the house.
A good place for more info is comp.home.automation.

--
Marty Jablow D.M.D., WB2WIO
jablow@jablow.overleaf.com

2678. Re: Ham-Homebrew Digest V94 #270

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 15:03:55 UTC
From: zlau@arrl.org
Message-ID: <1994Sep15.150355.31840@arrl.org>
Source record: 116366

Mike McCarty (jmccarty@spd.dsccc.com) wrote:
: In article <9408127794.AA779402328@smtpsend.comsys.rockwell.com>,
: <Dale_Croft@comsys.rockwell.COM> wrote:
:)
:)Subject: Freq. Counter Problem
:)ref ham-homebrew digest v94-*270

: [stuff deleted about freq. counter not able to count local oscillator
: from 3.3 to 5.6 MHz through a 1 uF capacitor, but ok on freq's above
: this]

: I doubt that. At 3 MHz the reactance of a 1 uF capacitor is 0.05 Ohms.

Not necessarily. Suppose there is a parallel resonance from the stray
inductance. You could get a very high impedance over a small range of
frequencies. Often, you see people trying to parallel capacitors to
avoid this problem. Sometimes, it doesn't work because it creates
more parallel resonances!

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2679. Re: New walkmans have AM-Wide

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 16:32:07 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cw6J9J.F1o@cix.compulink.co.uk>
Source record: 116221

The reason the radio covers 1.7Mhz and beyond is because they were made for the Japanese home market and the MW / AM band is extended to 1.7MHz or possibly even higher there.

Amazing but true!

oddjob@cix.compulink.co.uk

2680. Re: Dipoles & 50 ohm coax

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 17:00:16 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <359uj0$c4v@tekadm1.cse.tek.com>
Source record: 116367

greg@core.rose.hp.com (Greg Dolkas):
>. . . 40 meters is a little worrysome. The indicated SWR is about
>1.2:1 direct into the coax (no tuner), but I seem to have RF everywhere. The
>feed line is some 75' long (a tad over 1/2 wavelength), which you'd think
>should make things work best. I put a half-dozen turns of the feedline at
>the feedpoint as a choke, but it's still there. Suggestions are welcome.

You're on the right track trying a choke, since the RF is most likely
getting to the shack on the outside of the coax. This can be due to two
causes. One is inherent in connecting coax to a dipole -- the current on
the inside of the shield can flow back over the shield at the feed point.
This is why a choke is usually placed at the feed point. If the feedline
is positioned asymmetrically with respect to the dipole, it also can get
current induced on the outside by coupling to the dipole. To make an
effective choke on 40 meters, you'll need about 15 ft. of cable wound into
6 turns. With a half wavelength feedline, this may not do much good at the
feedpoint, and you may have best results by placing it a quarter wave
down from the feedpoint. More than one choke, placed at quarter wave
spacings, might be required in a severe case. If you want, you can use
about 50 type 72, 73, or 77 ferrite beads on the outside of the coax instead
of the air-core chokes. There's more information on this topic in Chapter 16
of the ARRL Handbook.

73,
Roy Lewallen
W7EL

2681. Homebrew Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 21:16:00 UTC
From: vp253dhq@ubvms.cc.buffalo.edu
Message-ID: <Cw6wEs.CJH@acsu.buffalo.edu>
Source record: 116230

Does anybody have any suggestions on a good homebrew J-pole? Another
question is, does anybody know how to make a good antenna that is portable
enough to be carried with you while you hike in the woods and could be
set up there (a type of dipole perhaps)? If anybody has any input or directions
could you please e-mail me at the address below. Thanks in advance.
Nikhil N1HHJ
vp253dhq@ubvms.cc.buffalo.edu

2682. duplexer contruction for 2M ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 22:28:15 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Sep15.162815.1@ualr.edu>
Source record: 116223

Hi all:
The UALR ARC is in the process of completing the HAM shack. We intend to operate a 2M repeater along with our other radio gear. The problem is that we have no money to buy commercial gear. We have a Motrac to convert but will have to build the duplexer.

We have the "ARRL Antenna Book", however the information on building a duplexer leaves one a bit hungry. Anyone who has additional information on building a duplexer please e-mail me so I can correspond with you.

Some of the questions I have concern the details of the drawings (they seem a bit limited) and any improved or altered designs that are worth considering.

73's and happy tinkering

--
****
Larry Heiss
University of Arkansas @ Little Rock
Dept. of Electronics and Instrumentation
e-mail ldheiss@athena.ualr.edu
grad student and UALR ARC Technical Advisor
call: KC5CVL
****

2683. Re: Ham-Homebrew Digest V94 #270

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-15 23:09:05 UTC
From: jmccarty@spd.dsccc.com
Message-ID: <35ak6h$ji3@sun001.dsccc.com>
Source record: 116220

In article <1994Sep15.150355.31840@arrl.org>,
Zack Lau (KH6CP) <zlau@arrl.org> wrote:
)Mike McCarty (jmccarty@spd.dsccc.com) wrote:

[stuff deleted]

): I doubt that. At 3 MHz the reactance of a 1 uF capacitor is 0.05 Ohms.

)Not necessarily. Suppose there is a parallel resonance from the stray
)inductance. You could get a very high impedance over a small range of
)frequencies. Often, you see people trying to parallel capacitors to
)avoid this problem. Sometimes, it doesn't work because it creates
)more parallel resonances!

I said "I doubt that." Depending on the type of the capacitor, what you
say is certainly true. I have used bypass capacitors for power supply
lines of:

100 uF
1000 pF
10 pF

all in parallel. It worked ok for me. A tantalum would have been better,
but might have still needed a 10 pF in parallel.

Mike

```
char *p="char *p=%c%s%c;main(){printf(p,34,p,34);}";main(){printf(p,34,p,34);}
```

2684. Kenwood TR-2600 mods needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 07:36:54 UTC
From: jdwong@enchilada.engr.ucdavis.edu
Message-ID: <35bhum$p3n@mark.ucdavis.edu>
Source record: 116218

Does anyone know how to modify the Kenwood TR-2600 to
extend transmitter coverage.

Thanks for any help on this matter.

-Joseph

2685. xtal vs mechanical filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 13:33:54 UTC
From: robertov@flash.ATC.Olivetti.Com
Message-ID: <35c6s2$m5l@olivea.ATC.Olivetti.Com>
Source record: 116228

Mechanical filter this unknow item !!!!!

I probably have an idea about how it works but the real question is this
What kind of circuit I have to use if I want to put a cristal
filter in place of a mechanical one ?

What is is the in/out impedence of both kind of filters ?

Can I do a direct replacement mech/xtal ? (I do not belive so)

I have a RTX that have a mechanical filter for SSB (455kHz 3.0kHz large)
and just two coupled/parallel resonant circuits for AM receive.
An AM filter 6kHz is optional and I asked to Scientific Radio (they build RTX)
the price and it is 85 USD and I do not want to spend those money
because I bought this old RTX in a surplus store for about 100 USD
here in Italy.
So i would like to build a xtal filter (may be with some additional
circutry) that can work in place of its own mechanical.
I have 3 455kHz ceramic resonators.

than you for the time you will give me.

Roberto VALFREDINI (from ITALY)

2686. Avantek MSA-0304 : Need Info!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 13:53:40 UTC
From: jernandez@pbs.org
Message-ID: <jernandez-160994085340@jernandez.pbs.org>
Source record: 116225

I foung an old Avantek MSA-0304 in my parts box last night, but I do not remember the specs for the device. I have checked the HP catalog(they now own Avantek) and the part does not appear in the book. What is this part? Is it a MMIC or GaAs FET transistor? What are the S-parameters for the device?
Any help will be appreciated!!

--
John J. Ernandez
Communication Systems Engineer
Public Broadcasting Service

"My Favorite Location On the Pennsy" MP-46.8 Plainsboro, NJ

E-Mail jernandez@pbs.org Member:PRR Technical & Historical Society
Phone: 703-739-5474 Southern Railway Historical Association
Amateur Radio: KA2YAP

2687. Design Project, Help with parts.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 14:01:20 UTC
From: lascal@cii3112-23.its.rpi.edu
Message-ID: <35c8fg$dln@usenet.rpi.edu>
Source record: 116222

Hello all,

A friend and I will soon be tackling a fairly ambitious Senior Design project here at the Rensselaer Polytechnic Institute, and I would like to ask for the advice of those who read this newsgroup.

The project is the design of a high performance 2304 and 3456 (and eventually 5760 ... but not this semester!) tower mounted transverter.

Anyway, getting to the point. I am wondering who y'all would suggest trying to get parts from (we're poor college pukes). I've personally had pretty good luck in the past getting components from semiconductor manufacturers, but have tried very little when it comes to getting samples of RF components.

What we are looking for are the following components for the following modules:

Low noise GaAs FETS for the LNA's :
For practicality, we would like to spec the noise figure of our home-built LNAs at 1 db or so, but I would like to try for 0.5db in practice (I've seen Zack do it, I figure I ought to give it a try :).

Medium Power GaAs FETS for TX :
We have a 20 watt surplus TWT to use, but if that is ever to fail, I would like to have at least 1 watt of solid state RF output if we can find the components. These might also be used to buffer the brick LO's that we might be using.

PIN Diodes:
In our design, we propose a great deal of "module sharing" for each of the bands included in the transverter. For this reason, we will be doing quite a bit of switching. The current design uses 2 relays (for the T/R and for the input to the LNA's), along with many PIN switches. These only need to be good to a few gigs, no real power is being switched.

If anyone has any ideas of who to contact, please clue us in. We've spoken with NEC (they have yet to really respond) and HP (said "no, I don't think so") so far. Anyone know how to contact Al Ward (wb5lua) at HP? Any other hams in strategic places ? :)

thank you for your help!

-Lance Lascari WS2B
(also working with John Barenys, KE4IBF)

Yes, the project is for W2SZ/1. Any vhf'ers reading like to
hear that YES, we're trying to get rid of our multiplier transmitter
on 2 and 3 Gigs!

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
"D'oh" -Homer Simpson

2688. Re: Avantek MSA-0304 : Need Info!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 14:08:09 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <35c8s9$lou@abyss.West.Sun.COM>
Source record: 116224

In article 160994085340@jernandez.pbs.org, jernandez@pbs.org (John J. Ernandez) writes:
>
> I foung an old Avantek MSA-0304 in my parts box last night, but I do not
>remember the specs for the device. I have checked the HP catalog(they now
>own Avantek) and the part does not appear in the book. What is this part?
>Is it a MMIC or GaAs FET transistor? What are the S-parameters for the
>device?
> Any help will be appreciated!!

This is a silicon MMIC; essentially the same as the MAR-3.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Sir, over there.... is that a man?" *

2689. Re: duplexer contruction for 2M ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 22:11:49 UTC
From: johnsong@aeon16.eglin.af.mil
Message-ID: <35d575$4d9@kbad.eglin.af.mil>
Source record: 116227

Hi all.

Please put me on the list of recipients for duplexer construction mail! I am interested in 2M and 70cm duplexers, but I have not found sufficient design and construction articles.

Thanks!

Gary Johnson, AD4DR
johnsong@tsun.eglin.af.mil

2690. Heathkit AC VTVM $11

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 23:25:32 UTC
From: bmork@comtch.iea.com
Message-ID: <35d9hc$4m5@krel.iea.com>
Source record: 116231
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew,rec.radio.swap,misc.forsale

Heathkit AV-2 Vacuum Tube Volt Meter, 300 VAC down to 10 mVAC.
Analog meter calibrated in 600 ohm DB and RMS volts.

Send me $11 and I'll send it in the mail to you.

--
Brian J. Mork, Lutron Pacific Northwest V:509-244-3764 D:509-244-9260
Inet bmork@comtch.iea.com / ARO ka9snf@ka7fvv.#ewa.wa.usa.na
USMail 6006-B Eaker, Fairchild, WA 99011

2691. Boonton 12 GHz Power Meter 4SALE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-16 23:30:09 UTC
From: bmork@comtch.iea.com
Message-ID: <35d9q1$4m5@krel.iea.com>
Source record: 116232
Cross-posted to: misc.forsale,rec.radio.swap,sci.electronics,rec.radio.amateur.homebrew,sci.electronics.repair

Boonton Electronics Model 42B Microwattmeter, sn #1038, and
a Model 41-4B (200kHz to 12.4GHz) Power Sensor probe, sn#25600.

The 42B has a mirror-backed 4.5" meter, indicating power on two scales:
from below -10 up to 0 on a dBm full scale, and 0 to 10 on a mWatt scale.
Seven decade ranges go from below 10nW (-50dBm) to 10mW (+10dBm). The
first calibrated mark is at 1nW (-60dBm). A front panel zero adjustment
nulls the meter for lowest power measurements and a calibration factor
adjusts -1dB to +1dB to account for sensor probe parasitics.

On the back panel, 115 or 230 VAC (50-400Hz) is selectable. Recorder output
(0-10 VDC, corresponding to the front panel meter reading) is provided on
banana plugs. A 44-pin card edge connector on the back allows external
programming. Functions include Scale Selection, DC Analog output, and Manual
Disable.

I have no manuals. Frequency ranges and accuracy specs for
probes, plus calibration data for varying temperature and a recorder
output are printed onto the top of the case and internal adjustment
procedures and locations are are printed on the inside of the case.

This meter & probe can be directly compared to the digital readout 42B and
41-4B probe offered by Tucker Electronics (Dallas, TX) for $895 and $350,
respectively, on page 19 of catalog 794B (July 1994). But their price of
$1245 is too much! I'll sell you both the meter and the probe for 60% of
that: $747.00

--
Brian J. Mork, Lutron Pacific Northwest V:509-244-3764 D:509-244-9260
Inet bmork@comtch.iea.com / ARO ka9snf@ka7fvv.#ewa.wa.usa.na
USMail 6006-B Eaker, Fairchild, WA 99011

2692. Re: Homemade antenna tap for instruments?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-17 14:26:43 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep17.142643.29794@ke4zv.atl.ga.us>
Source record: 116192

In article <Cw2xqI.AKM@wrs.com> jerald@wrs.com (Jerald Pendleton) writes:
>I would like to tap into my antenna coax and hook my
>frequency counter and/or the oscilloscope to watch
>my output signal.
>
>AES has Bird taps at $80.00 which strikes me as being
>a little high. (no doubt the product is worthwile but
>for what I want to do...)

You're paying for precision and calibration from Bird.
If you don't care that the tap is exactly 30 db over
a wide frequency range, then you can make your own in
several different ways.

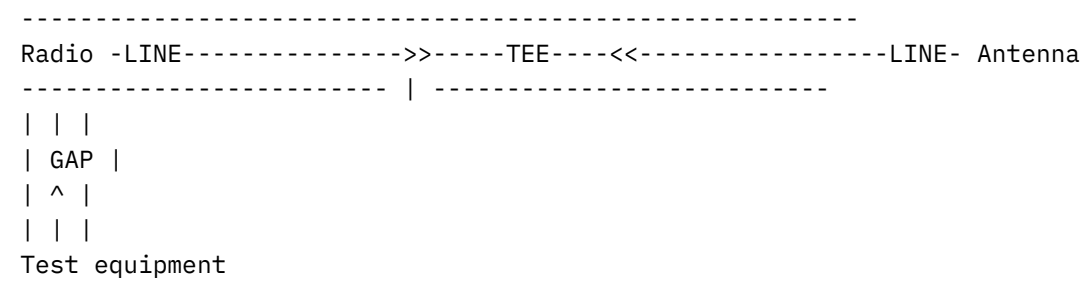
>Is there a simple way to have a permanent tap off the
>coax that I can feed to my instruments?
>
>I've thought about taking a few turns of wire around
>the outside of the coax and feeding that to the
>counter/scope. Though I worry that the
>signal level might be too great.

This often works, especially at HF, and with typically
leaky coax. The idea is that the braid shielding isn't
perfect, and that you can pick up some of the leakage.
Unless the coax is *really* bad, or you have RF on
the *outside* of the shield (a bad but common situation),
then this will work without overloading your equipment.
The more likely case is that you won't pick up *enough*
signal. If that's the case, you can try sliding an
insulated wire *under* the braid for a short distance.

>Someone posted here about a tap where they attached
>to the shield and a 1 meg resistor to the center
>conductor (I think), but I was asleep when that one
>went by. If some kind soul still has that post, I
>would be grateful.

A tap is a better idea. There are basically two ways to
do a tap. One is capacitive coupling, and the other is
a resistive divider. The resistive tap is broad band,
but can cause problems if there is DC on the cable, say
to power a mast mounted preamp, or if signal strength is
increased (burning out the resistor). A capacitive tap
doesn't care about DC on the cable, and is more tolerant
of signal power variations, but it is less broad band.

I make capacitive taps using a Tee fitting and a barrel.
I mill back the center conductor of the male Tee junction
so that it doesn't contact the inner socket of the barrel.
I measure the level at the barrel, and keep milling back
the center pin, a little at a time, until I get a signal
30 db down from the main signal at the frequency of
interest. Looks something like this



These work nicely over a single VHF or UHF band, and can handle any
power level up to the legal limit. The required gap becomes too small
at HF, and arcing can occur at higher power levels. A capacitive tap
at HF requires soldering a chip capacitor of sufficient value in place
of the gap. An inductive pickup works better at HF. That's just a
piece of insulated wire slipped through the braid weave for a short
distance.

If direct coupling by a resistor is preferred (you have to watch out
for DC on the line, and the power rating of the resistor), a chip
resistor can be substituted for the chip capacitor. The value for a
30 db coupler will be on the order of 1.6k.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2693. Where to find (stable) fixed frequency oscillators?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-17 18:59:28 UTC
From: reykowsk@eemips.tamu.edu
Message-ID: <35feag$j1p@news.tamu.edu>
Source record: 116229

Hi,
We want to built a receiver for an experimental magnetic resonance system.
Our experiments will be done at several fixed frequencies in the
range between 40MHz and 360MHz.
We are looking for stable oscillators with low harmonic distortion
in this frequency range.
True, we could buy Xtals and built the oscillators ourselfs, but
it seems so much easier if we can find a source for integrated oscillators.
Can anybody name some companies how built fixed frequency oscillators
in this range?

Thanks a bunch in advance,
Arne

2694. Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-18 02:10:56 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Sep17.221056.23096@wb3ffv.wb3ffv.ampr.org>
Source record: 116236

I come across a lot of circuit boards with various types of surface mount devices (SMDs) on them, and was wondering if it is practical to unsolder them and reuse them in some homebrew projects which require SMDs, or if it would be far, far better in every respect to simply bite the bullet and spend a fair sum of money to build up a stock of fresh SMDs from a catalog? When you remove SMDs and subsequently solder them again, are they likely to survive? Or do they tend to sustain a lot of damage, or tend to have vastly reduced lifespans? (This is assuming use of low wattage irons with tiny tips, for both removal and subsequent resoldering. Solder paste and hot air reflow would not be used, since this is for work at home.) I realize there are probably a lot of variables here, but in general is this a reasonable thing to do or should I forget about it?

2695. Re: Where to find (stable) fixed frequency oscillators?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-18 10:52:38 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Sep18.105238.7445@grian.cps.altadena.ca.us>
Source record: 116234

reykowsk@eemips.tamu.edu (Arne Reykowski) writes:

>Hi,
>We want to built a receiver for an experimental magnetic resonance system.
>Our experiments will be done at several fixed frequencies in the
>range between 40MHz and 360MHz.
>We are looking for stable oscillators with low harmonic distortion
>in this frequency range.
>True, we could buy Xtals and built the oscillators ourselfs, but
>it seems so much easier if we can find a source for integrated oscillators.
>Can anybody name some companies how built fixed frequency oscillators
>in this range?

I don't think that you are really looking at oscillators in the 40mc &
360mc range, but at ones that multiply up to there...

Go over to your local Motorola Service Station (look in the yellow
pages) and ask them about "Channel Elements". These are very stable,
temperature compensated TCXOs that when purchased new were rather
expensive, but second-hand are in the $5 to $40 range.

They came in two flavors: standard (blue and silver cases) and high accuracy
(gold cases). Some of the receive ones had a VCO function for automatic
locking on a slightly off-frequendcy signal, so for simplicitys sake I'd
stick with the elements designed for the translitters. All of them
worked on a standard positive 9v supply at a few milliamps. They plug
into the circuit in question using 3 pins - the pins are standard octal
tube size and an old Potter & Brumfield KRP-series relay can be
butchered for pins. Depending on the frequency that the
transitter was designed to operate on, they are designed for:
"Low band": 30-36, 36-42, 42-50mc ranges
"High Band": 136-150, 150-160, 160-172mc
"UHF": 406-420, 440*-470, 470-512mc

European commercial mid-range radios are 440-512, American are 450-512.

Most of these have either a 6mc, 8mc or 12mc base frequency, with a rich
harmonic output. A simple multiplier chain can get the frequency you
need. Just take a second-hand Channel element and send it to
International Crystal in Oklahoma City and tell them what frequency you
want the final signal to be, and they will cut the crystal, and install
it in the element, compensate it and guarantee it for ever.

International Crystal also has a standard line of oscillator, multiplier
and power amplifier modules that can be compared to a kids Lego Block set.
More expensive, but if you have the $$$ you can get a turnkey signal source.

However each oscillator-multiplier-power amplifier chain is limited to a little under 10% of the frequency - i.e. 36mc will have all the spot frequencies within about 3.5mc (1.75 on each side). A frequency at 40 would take another complete chain. A 360mc chain could handle about 347-382. The range can be narrowed bu tuning the chain, but not widened. By the way, narrower the range, the better the purity and stability.
This option is less engineering and bench work for you - just give International the frequencies of interest, and let them design the system, but more expensive.

Lastly, check with the used test equipment vendors such as C & H Surplus in Pasadena, CA (818-796-2628 - ask for Rick Fields). There are other, but I have done business with him (there are two Ricks there - ask for him). A HP 8640B oscillator is an excellent laboratory quality oscillator that will do just what you want, from microvolts to volts (into 50 ohms). It is dead-on stable with a short warmup, and can be battery operated if needed, and a IEEE-488 interface is available.
This option is probably the most expensive of the three I've given you, but the simplest. It is also the most versatile - the osc. will cover from (I think) 10 mhz to over 500mhz directly, with no multipliers or anything.

Please let me know what you end up with.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

2696. Re: ICOM 22S mod (repeater switch)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-18 15:10:06 UTC
From: jackf11801@aol.com
Message-ID: <35hl8e$5k3@newsbf01.news.aol.com>
Source record: 116233

In article <1994Sep9.032345.4806@toybox.raleigh.nc.us>,
n4zbb@toybox.raleigh.nc.us (Ken M. Edwards) writes:

>Anyone familar with is mod to the 22s and a way to add back in simplex ?

There are a couple of mods that I'm familiar with for the 22s. If the
diode matrix is still in place andworking, then it should be a simple
matter to 'undo' the mod. I have a schmatic and can fax it or whatever.
BTW, the 22S had a very hot receiver for its time (mid 70's). I still use
mine..
73 Jack, KA4HEO....sk

2697. HFG Motorola MX 3013

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-18 18:48:00 UTC
From: VOLKER@trashcan.escape.de
Message-ID: <5X43p_EeA0B@mtonne36.trashcan.escape.de>
Source record: 116253
Cross-posted to: sci.electronics.repair,rec.radio.amateur.homebrew

Hat jemand einen Plan, wie man das Handfunkgeraet MX 3013 von Motorola mit Zusatzfunktionen versieht?

Irgendwie musz das nur softwaremaeszig ueberspielt werden.

Antworten bitte dringend per PM an mich.

Volker grueszt den Rest der Welt ...
CrossPoint v3.02

2698. Help communication

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-18 21:06:42 UTC
From: Carl Evert Smith <cs6q+@andrew.cmu.edu>
Message-ID: <giT_jWS00WBNQ4Tp5B@andrew.cmu.edu>
Source record: 116235

Hello

I am in quite a Jam. I am looking for the postal adresses of all mail order companies dealing in communication equipment/ microphones, receivers, and transmitters. Also on the detection of microphones, receivers, and transmitters. Any information of any companies would be great.

Thank you

Marc Madjaric - Infojunkie - Forum - Pittsburgh PA
cs6q@andrew.cmu.edu

2699. BASIC compiler info wanted.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 05:36:51 UTC
From: tkomatsu@ccmail.NImc.go.JP
Message-ID: <9408197799.AA779953011@ccmail.nimc.go.jp>
Source record: 116237

Hello , OM.

My neighbour station is now making FAX-station with IBM-PC. For
his development, he asked some software about:

BASIC compiler for 8052BASIC,
or Closs C pre-compiler(or something like) for 8031/8051/8071 series.

If you know about that or related items, please tell me.

Thank you.

KOMATSU Toshiki / JF7WED <tkomatsu@ccmail.nimc.go.jp>

2700. Re: Where to find (stable) fixed frequency oscillators?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 08:58:18 UTC
From: jdow@BIX.com
Message-ID: <jdow.779965098@BIX.com>
Source record: 116238

reykowsk@eemips.tamu.edu (Arne Reykowski) writes:

>Hi,
>We want to built a receiver for an experimental magnetic resonance system.
>Our experiments will be done at several fixed frequencies in the
>range between 40MHz and 360MHz.
>We are looking for stable oscillators with low harmonic distortion
>in this frequency range.
>True, we could buy Xtals and built the oscillators ourselfs, but
>it seems so much easier if we can find a source for integrated oscillators.
>Can anybody name some companies how built fixed frequency oscillators
>in this range?

>Thanks a bunch in advance,
>Arne

Arne,
How stable do you MEAN when you say you are looking for stable oscillators? And what is your budget? (A very simple way, if a tad expensive, to get reasonably stable low distortion signals at those frequencies are prepackaged in almost any of the HP or Fluke or other frequency synthesizers out there. These are usually settable to at least 1Hz accuracies. And they are available with options for state of the art stablility crystal oscillators and will also accept things like Rb and Cs frequency standard inputs for improved stabilities.) (For lesser applications a few days hacking can result in acceptable frequency synthesizers in those two ranges that are useably good.)
{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com

2701. QRP mailing address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 13:20:54 UTC
From: fro@xs4all.nl
Message-ID: <35k37m$dnl@news.xs4all.nl>
Source record: 116239

Dear fellow hams,

(Sorry for posting this in a not so appropriate place.)

In this newsgroup I read about a QRP mailing list, lately. Unfortunately, the post did not mention a subscribe address. Could someone please be so kind to drop me an email message with how to subscribe? TIA!

73,

Frank, PA3FLV
fro@xs4all.nl

2702. Re: Where to find (stable) fixed frequency oscillators?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 16:40:54 UTC
From: gay@selkirk.sfu.ca
Message-ID: <gay.779992854@sfu.ca>
Source record: 116240

reykowsk@eemips.tamu.edu (Arne Reykowski) writes:

>Hi,
>We want to built a receiver for an experimental magnetic resonance system.
>Our experiments will be done at several fixed frequencies in the
>range between 40MHz and 360MHz.

I think the advice of a previous respondent to look into frequency synthesizers is a good idea.

Given the frequencies you quote, it appears you are going to be doing NMR on a superconducting magnet. So what you need in stability depends on what linewidths you are going to achieve, how long your experiments will last, and whether you want to go to the trouble of constructing a lock circuit.

Superconducting magnets are usually ok unlocked for all but the most stringent experiments, provided you have the necessary stability in your frequency source.

On my spectrometer, which I use for 'high resolution' solids work, I have a PTS synthesizer, with the cheaper (TXCO) frequency standard. This easily exceeds their long-term spec of 1 in 10^8 per day. Sitting in my lab there are shorter-term fluctuations of about 1-2 in 10^7, which I think is a little worse than you might expect from their temperature spec. Of course some of the problem could be in my shim coil power supply, since the fine shims are room temperature, not superconducting. Since the stability I get is sufficient for what I do, I haven't chased it further.

Note that if you are doing high resolution liquid nmr, you certainly need to do better than I do. I the case of PTS their better standard costs $300 more, and would be worth it for liquid work, unless you build a lock.

2703. ICOM IC260 Interface info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 18:48:35 UTC
From: gustin@eng.iac.honeywell.com
Message-ID: <35kme3$1f2@adm09.iac.honeywell.com>
Source record: 116241

[No readable article body recovered]

2704. Needing Info about YAGI.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 18:50:21 UTC
From: Jouni.Santara@utu.fi
Message-ID: <Jouni.Santara-1909942151390001@jusleniapolku.utu.fi>
Source record: 116242
Cross-posted to:
rec.radio.amateur.antenna,,rec.radio.amateur.equipment,,rec.radio.amateur.misc,,rec.radio.amateur.homebrew,,rec.radio.cb

Hello Fellows!

Does anybody where to get *a Macintosh software* for planning, testing, and building YAGI antennas? My friend who is needing this prefer to find something that is free or shareware. Also, all Macintosh programs which loosely relates to the ham-radio, etc. area are needed.

Could you send me the suggestions for the FTP, Gopher, WWW sites to my address below. I prefer personal mail, since I don't follow this list activily.

Thanks!

Jouni.Santara@utu.fi

2705. ICOM IC260 Interface Info retry

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 18:53:07 UTC
From: gustin@eng.iac.honeywell.com
Message-ID: <35kmmj$1f2@adm09.iac.honeywell.com>
Source record: 116243

[No readable article body recovered]

2706. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-19 19:33:42 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CwE6C7.4Ls@srgenprp.sr.hp.com>
Source record: 116244

Mike Czuhajewski (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
: I come across a lot of circuit boards with various types of surface
: mount devices (SMDs) on them, and was wondering if it is practical to
: unsolder them and reuse them in some homebrew projects

: in general is this a reasonable thing to do or should I forget about it?

It's not hard to unsolder 2-leaded devices and reuse them, but resistors
and capacitors are so cheap it's hardly worth the bother.

The best way to successfully recycle surface-mount IC's is to use a special
soldering iron attachment that heats all the leads simultaneously. You need
a different attachment for each size of IC package. Another method is to
use a heat gun. You do run the risk of damaging the parts and the PC board
from excessive heat, and it's very difficult to unsolder just one component
at a time with that method. On the other hand, unsoldering a whole bunch of
components at once makes for a fast salvage operation. Also one heat gun
is cheaper than buying a big collection of special desoldering tools.

AL N1AL

2707. BC221 Frequency Meter Calibration

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 06:25:44 UTC
From: drew@trl.oz.au
Message-ID: <drew.169.0@trl.oz.au>
Source record: 116245

Back in the '60's when I were a lad, I vaguely recall seeing a QST article describing how the wartime BC221 frequency meters were calibrated (using I think, an automated, or semi-automated system). That article was written maybe in the late forties or fifties. But I cannot trace it. Clues anyone, please?

73, Drew, VK3XU. Telecom Australia Research Laboratories.

2708. Overtone Crystal Filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 06:34:18 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <35lvpa$bjh@franklin.cc.utas.edu.au>
Source record: 116246

Hi!

Electronics Australia published an SSB receiver with an IF of 8MHZ using 3 8MHZ computer xtals in a ladder network configuration. All the capacitors were 100pF. The article said using a ladder network enabled the xtals to be all resonant at the same frequency.

Can the same idea be used with overtone xtals? For example, I would like to build a 48MHz IF filter.

Thanks for any info, Ian

2709. MILLIWATT reprints--taking orders

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 11:28:48 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Sep20.072848.23473@wb3ffv.wb3ffv.ampr.org>
Source record: 116247

Again, this is mainly for the QRPers who unsubscribed from the QRP list due to the loss of the daily digest function. I am now taking advance orders for the non-profit reprints of The Milliwatt (National Journal of QRPp). Price is $22 postpaid (applies to US/Canada only). If interested in ordering, send me an e-mail and I'll send you a copy of the posting I made to the QRP list. 73 and Queue Our Pea DE WA8MCQ

2710. Re: New walkmans have AM-Wide

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 12:01:07 UTC
From: jdc@cci.com
Message-ID: <CwFG1v.ILx@sunsrvr6.cci.com>
Source record: 116256

In article <Cw6J9J.F1o@cix.compulink.co.uk>,
Stephen Walters <oddjob@cix.compulink.co.uk> wrote:
>The reason the radio covers 1.7Mhz and beyond is because they were made
>for the Japanese home market and the MW / AM band is extended to 1.7MHz
>or possibly even higher there.
>...

The U.S. medium-wave broadcast band is being expanded. Some stations
will be relocated to new frequencies to reduce interference. Don't
know when this will happen, preparation started a couple years ago.
Ask the MW DXer's in rec.radio.amateur.shortwave.

The wide-band feature is the result of an industry effort for a
better quality AM signal. It was called "A-Max" or something like
that. Ask the MW folks for more info.

73...Jim N2VNO

2711. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 13:40:27 UTC
From: zlau@arrl.org
Message-ID: <1994Sep20.134027.17693@arrl.org>
Source record: 116251

Mike Czuhajewski WA8MCQ (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
: I come across a lot of circuit boards with various types of surface
: mount devices (SMDs) on them, and was wondering if it is practical to
: unsolder them and reuse them in some homebrew projects which require
: SMDs, or if it would be far, far better in every respect to simply bite
: the bullet and spend a fair sum of money to build up a stock of fresh
: SMDs from a catalog? When you remove SMDs and subsequently solder them
: again, are they likely to survive? Or do they tend to sustain a lot of
: damage, or tend to have vastly reduced lifespans? (This is assuming
: use of low wattage irons with tiny tips, for both removal and

No, this isn't the way to remove them. You want lots of heat and solder
so they literally slide off the board. A big iron with a large tip is
in order. Some people might even recommend a torch of some sort, but I
use a 100 watt iron to solder even waveguide!
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2712. Re: QRP mailing address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 13:43:08 UTC
From: jimn0oct@aol.com
Message-ID: <35motc$fn5@newsbf01.news.aol.com>
Source record: 116249

In article <35k37m$dnl@news.xs4all.nl>, fro@xs4all.nl (Frank R. Oppedijk)
writes:

asking about the qrp mailing list. The address is

qrp-l@netcom.com

to subscribe, sent this message to listserv@netcom.com:

subscribe qrp-l

in the
body of the message . That should do it.

72, jim n0oct

2713. Re: duplexer contruction for 2M ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 13:46:31 UTC
From: milcom@netcom.com
Message-ID: <milcomCwFKxJ.68q@netcom.com>
Source record: 116250

ldheiss@ualr.edu wrote:
: We have the "ARRL Antenna Book", however the information on building a
: duplexer leaves one a bit hungry. Anyone who has additional information
: on building a duplexer please e-mail me so I can correspond with you.

Also recall the arrl handbook talks about alternative to using
duplexers. Isolation can also be achieved by split site, receiver &
transmitter in different locations, but not too far apart, linked by
another band.
Another alternative is same site operation using separate transmit &
receive antennas vertically separted as much as possible. Using RG214
doulbe shielded is a must, but hardline is necessary for minimal loss.
Adittional isolation can be achieved with a simple coffee can notch
filter on the receiver, and maybe another on the transmitter/PA.
If you can build cavaties as well as wacom, telewave & celwave, there
is greate fortune in your future.

2714. Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 14:16:19 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <35mqrj$1j9j@info2.rus.uni-stuttgart.de>
Source record: 116252

Hello,

Upon reading the ARRL handbook from 1988, I noticed that quads,
both for HF and VHF are fed without a balun. However, the quad element
is fed in a current maximum much as the dipole.

Why does one get away without a balun for the one and not for the other?
I should think, that the asymetry will cause distortion of the radiation
pattern and the polarizazion, when the feed cable radiates.

May be it it works reasonably well in a single element or a cubical quad
but certainly not with a quagi!

Any experince/ opinion?

2715. Re: Overtone Crystal Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 14:28:38 UTC
From: mack@mails.imed.COM
Message-ID: <9408207800.AA780075968@mails.imed.com>
Source record: 116248

Ian:

This is an interesting thought. I have a filter breadboarded on the bench behind me using 16 MHz microprocessor xtals. It would be really quick to test it on the network analyser to see how well it works at 48 MHz. I suspect that the crytals will be much less closely matched as overtone units. I have these carefully matched for both resonance and series resistance, so the response is VERY close to theoretical.

I'll post the results of my test later in the week.

Ray Mack
WD5IFS
mack@mails.imed.com

2716. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 18:03:45 UTC
From: adams@chuck.dallas.sgi.com
Message-ID: <CwFwuA.96u@odin.corp.sgi.com>
Source record: 116257

In article <1994Sep20.134027.17693@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP)) writes:
...stuff deleted...
|> No, this isn't the way to remove them. You want lots of heat and solder
|> so they literally slide off the board. A big iron with a large tip is
|> in order. Some people might even recommend a torch of some sort, but I
|> use a 100 watt iron to solder even waveguide!
|> --
|> Zack Lau KH6CP/1 2 way QRP WAS
|> 8 States on 10 GHz
|> Internet: zlau@arrl.org 10 grids on 2304 MHz

A torch would most likely destroy any markings, thus rendering the use
of the SMT devices a real guessing game and a lot of time expended in
determining part values, etc.

Reminds me of an article in V1#1 of Byte Magazine on salvaging computer
parts from old computers. This was in the 1975 timeframe. The author
used a torch on the bottom side of the board until the IC dropped or
used channel-lock (tm?) pliars to hold IC until it would come out. :-)

dit dit
--
SIG
Chuck Adams K5FO CP-60
adams@sgi.com

2717. Re: Ham-Homebrew Digest V94 #272

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 22:31:13 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <CwG982.CDL@cix.compulink.co.uk>
Source record: 116255

subscribe oddjob@cix.compulink.co.uk

oddjob@cix.compulink.co.uk

2718. Re: QRP mailing address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-20 23:45:12 UTC
From: montp@vortex.eng.sc.rolm.com
Message-ID: <35ns68$636@vortex.eng.sc.rolm.com>
Source record: 116254

In article <35k37m$dnl@news.xs4all.nl>,
Frank R. Oppedijk <fro@xs4all.nl> wrote:
>Dear fellow hams,
>
>(Sorry for posting this in a not so appropriate place.)
>
>In this newsgroup I read about a QRP mailing list, lately. Unfortunately, the
>post did not mention a subscribe address. Could someone please be so kind to
>drop me an email message with how to subscribe? TIA!
>
>73,
>
>Frank, PA3FLV
>fro@xs4all.nl
>

QRP verses HOMEBREW, I don't know, they have a lot in common.... :)

The qrp maillling list is now on netcom.com. To join the mailing list
send email

to: listserv@netcom.com

in the body put: subscribe qrp-l

That will subscribe you to receive qrp mail. To send mail to the qrp
group, send it

to: qrp-l@netcom.com

have fun,
km6wt.

2719. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-21 09:33:25 UTC
From: charlos@rivm.nl
Message-ID: <CwH3vq.JHE@rivm.nl>
Source record: 116258

chuck adams (adams@chuck.dallas.sgi.com) wrote:
: In article <1994Sep20.134027.17693@arrl.org>, zlau@arrl.org (Zack Lau (KH6CP)) writes:
: ...stuff deleted...
: |> No, this isn't the way to remove them. You want lots of heat and solder

: Reminds me of an article in V1#1 of Byte Magazine on salvaging computer
: parts from old computers. This was in the 1975 timeframe. The author
: used a torch on the bottom side of the board until the IC dropped or
: used channel-lock (tm?) pliars to hold IC until it would come out. :-)
: ...more stuff deleted...

I believe it was in RadCom that I saw a simple method to remove surface
mounted IC's. If you can push a thin wire under the IC, fix one end
somewhere on the board (solder...) and the pull the wire against the inner
side of the IC legs while at the same time applying your soldering iron
to each successive leg. As the solder melts you pull the wire through thus
loosening the leg from the board. I have not tried this myself but perhaps
it is worth a try if you want to exchange one or more IC's on the board.
You >have< to be able to slide the wire under the IC though...

I don't know if this description makes any sense, English is not
what I speak daily.

73 from PA3CKR
Charlos Potma
charlos@rivm.nl

2720. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-21 12:16:06 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep21.121606.19753@ke4zv.atl.ga.us>
Source record: 116191

In article <1994Sep20.134027.17693@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Mike Czuhajewski WA8MCQ (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
>: When you remove SMDs and subsequently solder them
>: again, are they likely to survive? Or do they tend to sustain a lot of
>: damage, or tend to have vastly reduced lifespans? (This is assuming
>: use of low wattage irons with tiny tips, for both removal and
>
>No, this isn't the way to remove them. You want lots of heat and solder
>so they literally slide off the board. A big iron with a large tip is
>in order. Some people might even recommend a torch of some sort, but I
>use a 100 watt iron to solder even waveguide!

Zack's right, you want a lot of heat fast in order to remove SMDs without damage. I find a static hot air source ideal (a Weller Pyropen with the hot air attachment works well), but since they're a tad expensive, you can get by with an ordinary propane torch. Just hit the part with the torch (briefly) and tap the board on the bench. If your technique is right, the part will fall off without even a scorch mark. This is something you definitely want to practice before trying it out on an expensive board. If you hold the torch on the board a tad too long, it'll be charcoal.

For soldering a part onto a board, the hot air source is also ideal. Just clean and tin the pads, put a smidge of flux on with a toothpick, set the part in place with tweezers (the flux will hold it), and hit it briefly with the hot air source. The surface tension of the solder will pull the part into perfect alignment on the board. This is a lot easier and faster than dealing with thru-hole boards and parts.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2721. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-21 12:22:16 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep21.122216.19888@ke4zv.atl.ga.us>
Source record: 116193

In article <CwFwuA.96u@odin.corp.sgi.com> adams@chuck.dallas.sgi.com (chuck adams) writes:
>
>A torch would most likely destroy any markings, thus rendering the use
>of the SMT devices a real guessing game and a lot of time expended in
>determining part values, etc.

I've never found this to be true. In fact, the markings generally seem
to brighten up a bit after the torch is applied. The markings are designed
to remain readable when the part is soldered, and they are hot air soldered
at the factory. (The factory usually doesn't use a hand operated static
hot air source of course. They usually use a hot oil vapor process or an
infared process, but the heat is the same.)

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2722. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 04:59:23 UTC
From: jmollan@egreen.iclnet.org
Message-ID: <1994Sep22.045923.4921@egreen.wednet.edu>
Source record: 116261

In article <35mqrj$1j9j@info2.rus.uni-stuttgart.de>,
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
>Hello,
>
>Upon reading the ARRL handbook from 1988, I noticed that quads,
>both for HF and VHF are fed without a balun. However, the quad element
>is fed in a current maximum much as the dipole.
>
>Why does one get away without a balun for the one and not for the other?
>I should think, that the asymetry will cause distortion of the radiation
>pattern and the polarizazion, when the feed cable radiates.
>
>May be it it works reasonably well in a single element or a cubical quad
>but certainly not with a quagi!
>
>Any experince/ opinion?

I always have used baluns with my hf full-sized quads in the past. They
give a balanced feed and are good connecting points.

When I made quagis for 144 and 220 Mhz, I never used any type of balun.
None were commercially available and every new connection privides loss.

On my dipoles, it's about 50-50. Theoretically, you get a more balanced
radiation pattern with a balun.

I do use one on my hf triband beam.

good luck on your research

John AE7P

2723. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 07:33:43 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <780219223snz@ifwtech.demon.co.uk>
Source record: 116263

In a previous article Russ Renaud VA3RR/AA8LU wrote:
>
> In a previous article, charlos@rivm.nl (Charlos Potma) says:
>
> >I believe it was in RadCom that I saw a simple method to remove surface
> >mounted IC's. If you can push a thin wire under the IC, fix one end
> >somewhere on the board (solder...) and the pull the wire against the inner
> >side of the IC legs while at the same time applying your soldering iron
> >to each successive leg. As the solder melts you pull the wire through thus
> >loosening the leg from the board. I have not tried this myself but perhaps
> >it is worth a try if you want to exchange one or more IC's on the board.
> >You >have< to be able to slide the wire under the IC though...
>
> Heat guns sold at the hardware store to strip paint, etc are generally hot
> enough to melt solder. On old single sided boards, I lever up the IC with
> a very thin screwdriver, heat the trace side of the board up with the heat
> gun, and can usually strip an entire board in half an hour.
>
> I wouldn't want to try this method on boards with components on both
> sides, however. 8^)

Yes, it was in RadCom - I wrote it, through the idea didn't originate with me. To correct something that Charlos said, you don't actually have to thread the wire under the IC itself (which is usually impossible), but through the small gap which usually does exist between the *side* of the IC and the legs.

Which method to use depends on what you want to keep intact: the ICs, the board or both.

If you don't care about the board, I agree with Russ: use a heat gun or even a blowtorch (at a distance) to melt all the solder very quickly, together with any hot-melt glue holding the SMD chips down. But this doesn't leave the board in very good shape!

If you want to keep the board but not the IC (as in a repair), your main priority is to protect the tracks which are very fragile. Snip the legs of the IC off, one at a time, using very fine-nosed cutters which don't lever against the body of the IC and tear up the tracks. Then carefully desolder the loose bits from the individual tracks.

If you want to keep both the board and the IC, use the wire method, but work v e r y s l o w l y and carefully to avoid tearing the tracks.

Hope this helps you decide which is the best way...

--
73 from Ian G3SEK | Editor, The VHF/UHF DX Book
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

2724. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 12:11:30 UTC
From: ae517@FreeNet.Carleton.CA
Message-ID: <CwJ5v7.H8r@freenet.carleton.ca>
Source record: 116267

In a previous article, jeffrey@kahuna.tmc.edu (Jeffrey Herman) says:

>>Heat guns sold at the hardware store to strip paint, etc are generally hot
>>enough to melt solder.
>
>I've always used a heatsink (needle nose pliers) when soldering
>transistors. Are IC's so heat resistant that no heatsink is
>necessary to prevent damage? How would you heatsink *all* the
>leads of the device at the same time?
>
>
>Jeff NH6IL

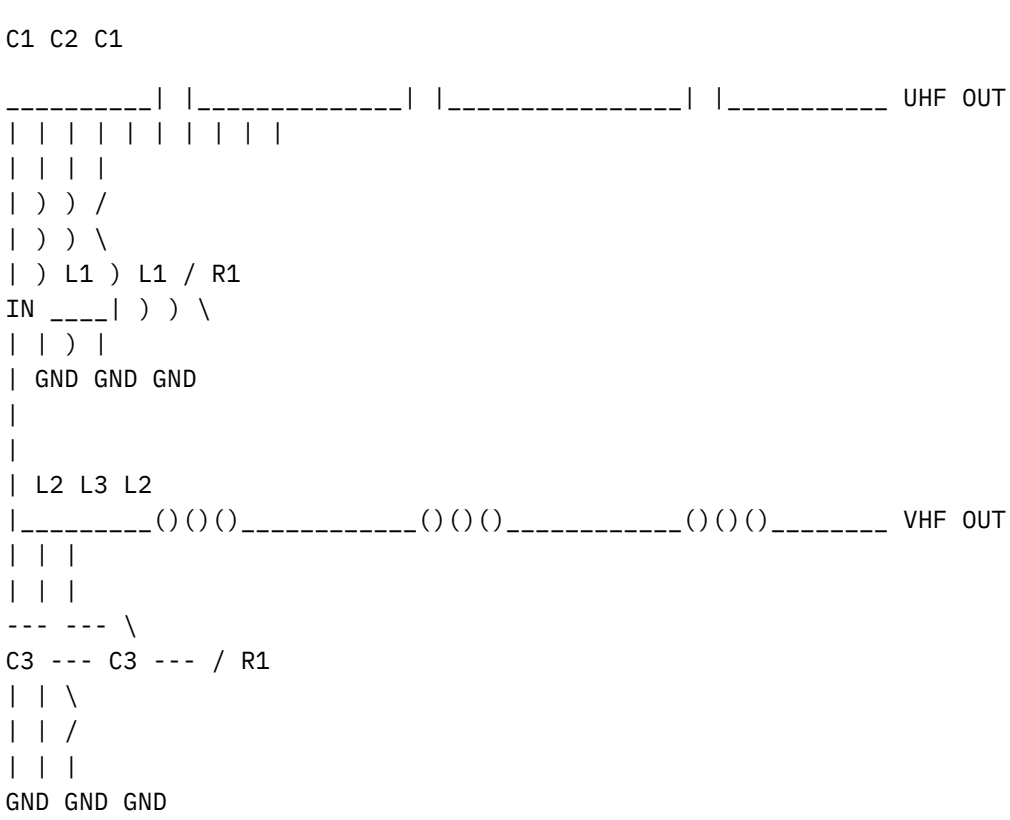
They don't put a heat sink on all the leads of the device when the devices
are wave-soldered during the manufacturing process. These days, it's only
the very delicate devices that are hand-soldered onto the board,
everything else is wave-soldered. Last visit to an electronics
manufacturing facility, there was even a machine that automated that process!
The SMT facility was simply amazing, as well.

73
Russ va3rr/aa8lu

2725. 2m/70cm 'plexer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 14:22:56 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <35s400$2pgu@yuma.ACNS.ColoState.EDU>
Source record: 116266
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

From OCT 1991 QST:



Where:
C1: 4.8 pF
C2: 3.3 pF
C3: 15 pF
L1: 2 turns #14, 3/16" dia.
L2: 4 turns #14, 3/16" dia.
L3: 5 turns #14, 1/4" dia.
R1: 50k, 1/2 w.

I built mine over a solid pc board and wound both L2's and L3 from one piece of wire. I built up the caps from three to four cer disc caps each, I used four for C1 in parallel.

73, Galen, KF0YJ

2726. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 14:54:27 UTC
From: anto@gate.net
Message-ID: <35s5r3$12da@tequesta.gate.net>
Source record: 116173

Stefan Wimmer (wsw@cellware.de) wrote:
: In article <1994Sep17.221056.23096@wb3ffv.wb3ffv.ampr.org>
Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski) writes:
: >From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski)
: >Date: Sat, 17 Sep 94 22:10:56 EDT
: >Subject: Reuse surface mount parts?

: >I come across a lot of circuit boards with various types of surface
: >mount devices (SMDs) on them, and was wondering if it is practical to
: >unsolder them and reuse them in some homebrew projects which require
: >SMDs, or if it would be far, far better in every respect to simply bite
: >.........
: >or should I forget about it?

: Here my $0.02:

: I often reused SMDs without any problems (even GALs, FPGAs, processors...) by
: unsoldering them with a hot-air pistol as you use for eg. removing paint. Even
: through-hole devices can easyly be unsoldered with this tool by heating the
: (afterwards useless) PCB's bottom side.

: Stefan

I've done this too very successfully on SMDs. In many cases the PCB is
damaged but if salvaging the parts is your intention, I think this is
the fastest way to go. If you need SMD resistors and capacitors they
fall off the boards very easily (only two leads).

--
Nigel Kirlew
anto@gate.net

2727. Re: 2m/70cm 'plexer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 15:23:50 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <35s7i6$8v@usenet.rpi.edu>
Source record: 116259
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Galen Watts (galen@picea.CFNR.ColoState.EDU) wrote:
: From OCT 1991 QST:

[diagram of a DIPLEXER]

Was this in response to the request for a 2m/440 dUplexer design? I
may have missed something, 'just didn't want anybody to get confused
over the terminology.

-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2728. Overtone crytal filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 16:04:53 UTC
From: xenolith@halcyon.COM
Message-ID: <199409221604.AA18172@halcyon.com>
Source record: 116260

The QRP-plus uses a single up conversion to 50Mhz with a Cohn xtal filter using 50Mhz xtals. I doubt these are fundamental xtals! They get SSB like bandwidth.

Worth experimenting with!

Kevin Purcell, N7WIM / G8UDP xenolith@halcyon.com 206/649-6489
Seattle dBug Mac Developers SIG organiser

2729. Re: 2m/70cm 'plexer (DU and DI)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 17:32:32 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <35sf3g$128a@yuma.ACNS.ColoState.EDU>
Source record: 116262
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <35s7i6$8v@usenet.rpi.edu> lascal@cortez.its.rpi.edu (Lance Lascari WS2B) writes:
>Galen Watts (galen@picea.CFNR.ColoState.EDU) wrote:
>: From OCT 1991 QST:
> [diagram of a DIPLEXER]
>Was this in response to the request for a 2m/440 dUplexer design? I
>may have missed something, 'just didn't want anybody to get confused
>over the terminology.

I looked it up (ARRL Handbook,1987): 'A duplexer is a device that allows the repeater transmitter and receiver to be connected to the same antenna. ...a duplexer will allow the signal from the antenna to reach the receiver while blocking energy from the transmitter.'

The diagram I posted will (and does) work as a 2m/440 DUplexer. It will not work as a 2m duplexer, nor will it work as a 440 duplexer.

DIPLEX: (Webster's Ninth) 'Relating to or being simultaneous transmission or reception of two radio signals using a common feature (as a single carrier or single antenna)'
(quoted as written, even though I think it's oddly worded)

It does that (2m/440 DIplexer), too.

Galen, KF0YJ

2730. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 18:58:44 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CwJopw.M77@srgenprp.sr.hp.com>
Source record: 116169

Jeffrey Herman (jeffrey@kahuna.tmc.edu) wrote:
: In article <CwHI7G.7M1@freenet.carleton.ca> ae517@FreeNet.Carleton.CA (Russ Renaud) writes:

: >Heat guns sold at the hardware store to strip paint, etc are generally hot
: >enough to melt solder.

: I've always used a heatsink (needle nose pliers) when soldering
: transistors. Are IC's so heat resistant that no heatsink is
: necessary to prevent damage? How would you heatsink *all* the
: leads of the device at the same time?

Using a heatsink when soldering transistors is a throwback to the old days when germanium transistors were common. Nowdays, nearly all solid-state devices can easily withstand the temperature of molten tin-lead solder.

AL N1AL

2731. Re: 2m/70cm 'plexer (DU and DI)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 19:00:26 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <35sk8b$7d9@usenet.rpi.edu>
Source record: 116171
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Galen Watts (galen@picea.CFNR.ColoState.EDU) wrote:

: I looked it up (ARRL Handbook,1987): 'A duplexer is a device that allows the
: repeater transmitter and receiver to be connected to the same antenna.
: ...a duplexer will allow the signal from the antenna to reach the receiver
: while blocking energy from the transmitter.'

: The diagram I posted will (and does) work as a 2m/440 DUplexer. It will
: not work as a 2m duplexer, nor will it work as a 440 duplexer.

: DIPLEX: (Webster's Ninth) 'Relating to or being simultaneous transmission
: or reception of two radio signals using a common feature (as a single carrier
: or single antenna)'
: (quoted as written, even though I think it's oddly worded)

: It does that (2m/440 DIplexer), too.

Not to sound like a pyrotechnician, but I've never seen a dual band
repeater that was not symmetrical in the sense that it was 2 repeaters
that did not both transmit and receive at the same time. A link might
do that, but why would a repeater? I could go on at length what would
be annoying and problematic with this.

Like I said... I was interested in clearing up the
terminology. I'm not sure what point has been made.

as a reminder, here is one of the early requests:

>Please put me on the list of recipients for duplexer construction mail! I am
>interested in 2M and 70cm duplexers, but I have not found sufficient design
>and construction articles.

My interpretation of this, since 2 bands are mentioned and
duplexers is plural, is that the interest is in duplexer design.

-Lance, go ahead.... flame away

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2732. New Walkmans have AM-Wide

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 19:09:36 UTC
From: gull@grex.cyberspace.ORG
Message-ID: <Pine.3.07.9409221536.G1871-9100000@grex.cyberspace.org>
Source record: 116170

One of these radios which tunes to 1.7 MHz might be interesting to
use with a shortwave converter; the larger tuning range would allow a
larger portion of the SW band to be covered with one crystal.

_ _
__ _ _ _| | | | David Brodbeck Alma, MI
/ _` | | | | | | | Amateur Packet(AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
| (_| | |_| | | | +---
__, |__,_|_|_|_| @ grex.cyberspace.org
|___/

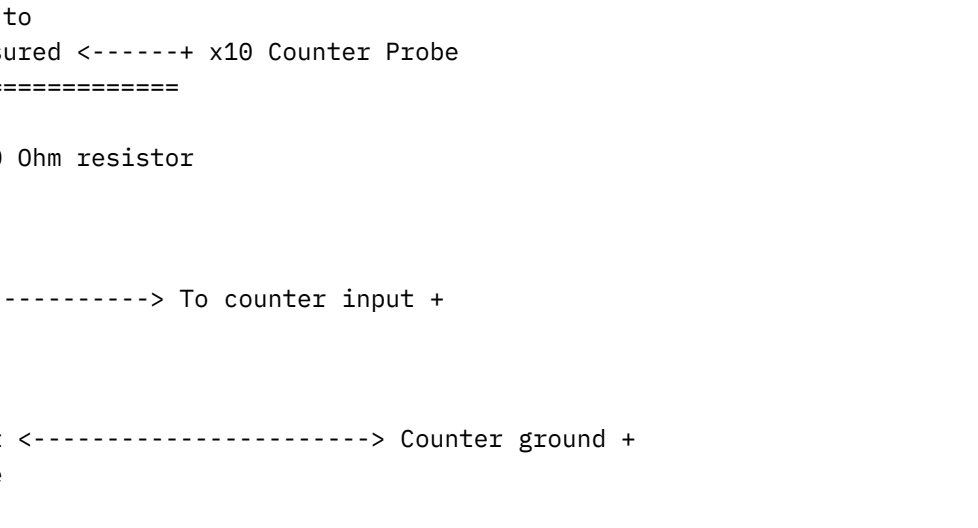
2733. Re: Hi Z Probe 50 mhz Freq Counter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 22:33:33 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <780273213snz@arkas.demon.co.uk>
Source record: 116168

In article <m0qnYY8-000EmBC@rogue.com> dshalita@rogue.COM "David Shalita" writes:

> My counter has <1mv rms 10 - 600 mhz sensitivity, so adding a
> MAR amp may not be necessry. My counter already has 4 MAR-6's
> at the 50 ohm input. I suspect a (wide band) Hi-Impedance
> probe is what is needed for this measurement. Please comment.
>
> I've not been able to use the 50 ohm input of my counter
> to measure the NE-602 LO frequency or the LO on similar mixer IC's.
> I assume the RF levels are too small or that the
> LO stalls due to the low impedance, or both.
>
> Can someone suggestion a probe scheme to add to my 50 ohm
> input counter to help measure applications like this NE-602 LO?
> The counter is capable of measuring to 2.4 ghz. So, the
> added circuit(s) need to match most of that frequency range.

Something like the "x10" probes used on CRO's may be useful to you.
However, these are designed for 1 MOhm inputs. You could build the
equivalent for a 50 Ohm input as follows:



This will present a 500 Ohm impedance to the circuit containing the signal
that you desire to measure. The tradeoff is that the sensitivity drops to
10 mV.

You could replace the 450 Ohm resistor with a 4950 Ohm device. This results
in an impedance of 5 kOhms, but a sensitivity of 100 mV.

There are various other tradeoff that you could use. Construction
techniques will dictate whether the probe you build will operate to

the counter's maximum input frequency without loading the measured
circuit with excessive reactance (due to stray capacitance / inductance).

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2734. Please Recommend An Intro. Radio Book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 22:58:22 UTC
From: browere@einstein.cs.ucdavis.edu
Message-ID: <35t26e$41m@nic-nac.CSU.net>
Source record: 116264

I am very interested in how radio receivers/transmitters work and would
like someone to recommend a beginner book that is not infantile and
does contain experimentation circuits.

Preferably a readily available book.

Thank you,
Eric

2735. Re: Please Recommend An Intro. Radio Book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-22 23:15:39 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <35t36r$hji@usenet.rpi.edu>
Source record: 116265

Eric B. (browere@einstein.cs.ucdavis.edu) wrote:
: I am very interested in how radio receivers/transmitters work and would
: like someone to recommend a beginner book that is not infantile and
: does contain experimentation circuits.

I would suggest "solid state design for the radio amateur" (I think
that's the title.. I don't have a copy myself) published by the ARRL.
I think it's merely $12 or so, and has lots of practical circuits as
well as good discussion. The ARRL handbook is also a bible for this
sort of information. Anybody have ordering information on the net? I
think the ARRL has some sort of email info services on line.. I'll get
back to ya if I figure them out.
-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2736. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 00:28:34 UTC
From: dave@eram.esi.com.au
Message-ID: <35t7fi$975@eram.esi.com.au>
Source record: 116174

[I would e-mail this, but it bounces]

In article <CwICzB.CDB@news.hawaii.edu>,
jeffrey@kahuna.tmc.edu (Jeffrey Herman) writes:

| I've always used a heatsink (needle nose pliers) when soldering
| transistors. Are IC's so heat resistant that no heatsink is
| necessary to prevent damage? How would you heatsink *all* the
| leads of the device at the same time?

Like you, I was pretty paranoid with heat-sinking. Then I discovered
the joys of a temperature-controlled soldering iron...

--
Dave Horsfall (VK2KFU) | dave@esi.com.au | VK2KFU @ VK2AAB.NSW.AUS.OC | PGP 2.6
Opinions expressed are mine. | E7 FE 97 88 E5 02 3C AE 9C 8C 54 5B 9A D4 A0 CD

2737. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 01:19:57 UTC
From: montp@vortex.eng.sc.rolm.com
Message-ID: <35taft$k0e@vortex.eng.sc.rolm.com>
Source record: 116176

In article <35mqrj$1j9j@info2.rus.uni-stuttgart.de>,
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
>Upon reading the ARRL handbook from 1988, I noticed that quads,
>both for HF and VHF are fed without a balun. However, the quad element
>is fed in a current maximum much as the dipole.
>
>Why does one get away without a balun for the one and not for the other?
>I should think, that the asymetry will cause distortion of the radiation
>pattern and the polarizazion, when the feed cable radiates.

Who says that it doesn't? Many people do not use baluns for simple
dipole antennas, including me. Technical purest will always use a balun
for connecting coax to a dipole. On the same note, not all quads are
fed like a dipole. Some quad designs use a gamma match similar to
connecting coax to a yagi with a gamma match.

Here are some of the pros and cons for using and not using a balun:
(speaking purely of 50 ohm to 50 ohm baluns)

Pros for using a balun:
matches the balance dipole to the unbalanced coax
no rf should run down the outside of the coax

Cons for using a balun:
small amount of RF is lost going through the balun

So,

Pros for not using balun:
no RF lost because of balun

Cons for not using balun:
some rf goes down the outside of the coax
small distortion to wave pattern caused by rf on coax shield

Mainly, in practice it just doesn't seem to matter too much.

73,
km6wt

2738. Re: Homebrew Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 03:14:31 UTC
From: John Sokol <jfs627@delphi.com>
Message-ID: <BgwV4if.jfs627@delphi.com>
Source record: 116175

You do not indicate for what frequency you are looking for. If, per chance, you are interested in a 2M vertical-dipole, I have a copy of an article in July 1993 "QST". The antenna "collapses to a package just 18" long and 3 inches wide". The article has pictures of the antenna set up and collapsed. I would be happy to fax/snail mail you a copy if you cannot locate that issue of "QST". I have not yet built this one, but it will be a winter project for me.
Glad I could help.

73's

John/KE4KPV

2739. send prospect.txt

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 05:44:52 UTC
From: mr5@cornell
Message-ID: <35tj8v$g4@homer.alpha.net>
Source record: 116172
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

```
In article <rec.radio.info-arrl.email.info_778561204@ve6mgs.ampr.ab.ca>,
<mtracy@arrl.org> writes:
> Path:
news.alpha.net!mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans
net!gatech!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!unixg.ubc.ca!quartz.ucs.ualbe
rta.ca!alberta!ve6mgs!rec-radio-info
> Message-ID: <rec.radio.info-arrl.email.info_778561204@ve6mgs.ampr.ab.ca>
> Supersedes: <rec.radio.info-arrl.email.info_775882802@ve6mgs.ampr.ab.ca>
> Sender: news@ve6mgs.ampr.ab.ca (UseNet News System)
> Originator: mark@ve6mgs.ampr.ab.ca
> From: mtracy@arrl.org (Michael Tracy)
> Subject: Periodic Announcement - ARRL Email Information Server
(info@arrl.org)
> Newsgroups:
rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebre
w,rec.radio.info
> Followup-To:
rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebre
w
> Lines: 113
> Approved: rec-radio-info@ve6mgs.ampr.ab.ca
> Expires: Sat, 24 Sep 1994 23:59:59 GMT
> Date: Fri, 2 Sep 1994 21:00:06 MDT
> Lines: 113
> Xref: news.alpha.net rec.radio.amateur.misc:4028
rec.radio.amateur.digital.misc:959 rec.radio.amateur.homebrew:962
rec.radio.info:688
>
> Periodic Announcement - ARRL Email Information Server (info@arrl.org)
>
> The services that the ARRL provides via the internet include the
> Email Information Server and the Technical Information Service.
> The Information Server is an automated mail server that gives you
> access to many of information files relating to various facets of
> Amateur Radio. You can retrieve any or all of these files by
> sending an email message to info@arrl.org here at ARRL HQ.
> Each file you request is then mailed to you automatically.
>
> To use it, mail messages to:
>
> info@arrl.org
>
> Each line of the message body should contain a command as shown below.
```

> The subject of your message is not processed and may be omitted. You
> may place as many commands in a message as you want. The files you
> request will be sent to you in separate messages. Only ASCII text
> files are supported.
>
> Valid INFO commands:
>
> reply <address> (may be needed - see below for explanation)
> help
> index
> send FILENAME (example: send prospect.txt)
> quit
>
> In the above message example, "help" retrieves a brief set of
> instructions for info, "index" retrieves a list of available files
> and "send prospect.txt" retrieves a text file containing information
> on becoming a radio amateur.
>
> Note to users with FTP capability: All of these files are also
> available by anonymous ftp to oak.oakland.edu in the
> pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
> in the /league sub-directory for a complete listing of available
> files.
>
> If you want to retrieve several text files with one message, use a
> separate line for each "send filename" request.
>
> Your From: field or Reply-to: field in your header should contain a
> valid Internet address, including full domain name. If your From:
> field does not contain a valid Internet address, the answer will not
> reach you. If this is the case, then use the reply command as shown
> above. When needed, this command should always be the first command
> in your message.
>
> IMPORTANT: Please use the quit command in your message. This will
> prevent processing errors from message signatures.
>
> PLEASE NOTE!: This is an automated system not capable of handling
> written requests. Any questions on the info-server or the content
> of any of its files should be directed to mtracy@arrl.org.
>
> ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the
> reply address is redirected to keep bounced messages from endlessly
> looping. Write a new message to info@arrl.org instead.
>
> The Technical Information Service gives League members on the
> internet better access to the knowledgeable technical staff here
> at ARRL HQ. Questions relating to Amateur Radio and related
> technical topics are welcome. To use this service, send a normal
> e-mail message to tis@arrl.org with your question spelled out in

> plain english. For best service, be as specific as possible and
> keep your line length in messages to a maximum of 80 characters.
> Due to personnel limitations, priority will be given to questions
> from League members.
>
> Best Regards,
>
> Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
> (e-mail mtracy@arrl.org)
>
>
> Sample of files available from INFO: (There are lots more!)
>
> Note - If you are not yet an Amateur Radio operator retrieve the
> file prospect (send prospect) for information on how to easily get
> started in this fun hobby.
>
> FILENAME SIZE DESCRIPTION
> --------------- ---- --------------------
> PROSPECT.TXT 2k How to get your Amateur Radio license
> EXAMS.TXT 52k Current exam schedule info - updated bi-weekly
> EXAMINFO.TXT 9k Examinations - what to bring - requirements
> USERS.TXT 6k List of HQ Email addresses
> ARRLCAT.TXT 39k Catalog of ARRL Publications - commercial content
> JOIN.TXT 2k How become an ARRL member
> SERVICES.TXT 5k A condensed list of ARRL membership services
> TOUR.TXT 28k An electronic tour of ARRL Headquarters
> DIR.HQ 5k Visiting ARRL HQ - directions and tour information
> HFBANDS 7k Breakdown of users of HF spectrum
> Q-SIGS 1k ARRL list of Amateur Radio Q-signals
> W1AW.SKD 2k W1AW schedule of transmissions and operation
> PRODREV1.TXT 12k Which rig is best? Part 1 - QST Lab Notes
> PRODREV2.TXT 22k Which rig is best? Part 2 - QST Lab Notes
> !LIST.TXT 6k QST Bibliographies List
> RFIGEN.TXT 37k How to solve an EMI/RFI problem - QST Lab Notes
> RFISOURC.TXT 13k Where to buy filters - EMI-proof telephones etc.
> ADDRESS.TXT 16k Lots and lots of ham/electronic company addresses
> KITS.TXT 6k List of companies that sell kits
> BBS.TXT 12k List of ham-radio land-line bulletin boards
> FAQ1.TXT 25k Introduction to the FAQ and Amateur Radio
> FAQ2.TXT 45k Amateur Radio Orgs, Services and Info Sources
> FAQ3.TXT 32k Amateur Radio Advanced and Technical Questions
>
> --
> American Radio Relay League, Inc. Tel: 1-203-666-1541
> 225 Main Street Fax: 1-203-665-7531
> Newington, CT 06111 Email: mtracy@arrl.org
> --

2740. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 13:51:55 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep23.135155.29990@ke4zv.atl.ga.us>
Source record: 116194

In article <CwICzB.CDB@news.Hawaii.Edu> jeffrey@kahuna.tmc.edu (Jeffrey Herman) writes:
>In article <CwHI7G.7M1@freenet.carleton.ca> ae517@FreeNet.Carleton.CA (Russ Renaud) writes:
>>Heat guns sold at the hardware store to strip paint, etc are generally hot
>>enough to melt solder.

Yes, they actually have too high a temperature, over 800 F, and their heat is spread over too large an area. You can use a variac to cool them down a bit, and sheetmetal nozzle shrouds to direct the hot air exactly where you want it to go. Then they do OK. There are much better hot air sources available, however.

>I've always used a heatsink (needle nose pliers) when soldering
>transistors. Are IC's so heat resistant that no heatsink is
>necessary to prevent damage?

Sure are, and so are most transistors newer than the old point contact types. I *never* use a heatsink, and have *never* lost a modern silicon device due to heat from soldering. Of course you have to have clean tinned surfaces, flux, the right amount of heat, and be quick. A high capacity heat source is better than one too small. If it takes more than a second from application of the heat to flowing solder, your heat source is too small, and heat will have time to migrate up the leads into the device (and down the trace, melting the trace bond to the board).

People make two major mistakes when working with SMDs (and even with leaded parts). The first mistake is to use too high a temperature, and the second is to supply too few BTUs. Remember that temperature and heat are two different things. You want to keep the temperature down, 600 F is as hot as you should ever allow your heat source to be for soft soldering. But you need to have the heat flow way up. This is where the hot air sources really shine. They can deliver a lot of BTUs quickly.

If you are using an iron, tip selection is very important. You don't want a fine conical point tip. That won't allow rapid heat transfer. You want a chisel point tip to give you more contact area. Ideally, the tip will be just as wide as the lead and/or trace that you're working with. It should either be backed by a large thermal mass, or a very good closed loop temperature controller, so that it isn't chilled by the work. And it should be frequently tinned and fluxed so that there's a good heat conducting surface to the contact point. If solder won't flow nearly immediately when you apply the iron, you're doing something wrong, and can damage parts and boards.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2741. RE: Plans for 2M 50W solid state amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 14:24:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <2E82E603@msmail.uthscsa.edu>
Source record: 116177

```
--Boundary (ID 2+aB7dyVtEJniohzoY1g2w)
Content-type: TEXT/PLAIN

In digest 281 Jay Porter writes:

>I am looking for information or plans for building a 50W solid state
>amp for use in the 2m or 2m/440 bands. I am interested both in complete
>circuit diagrams or suggestions for power transistors that I can use to
>build these amps. Any information would be appreciated. Thanks.
>
>
>Jay Porter
>Texas A&M University
>j-porter@tamu.edu

Jay,
Check some of the OLD ARRL handbooks (early 80's and late 70's).
They had a couple of amps (FM) that you might be interested in.
One was a 10-15W for handytalky and one was a 10W in 60W out.
Both were solid state and used fairly common transistors. If you
can't get one of these handbooks I'd be glad to FAX or snail-mail
you a copy of them.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
**********************************************************************
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **
----------------------------------------------------------------------
| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
**********************************************************************

--Boundary (ID 2+aB7dyVtEJniohzoY1g2w)--
```

2742. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 14:35:52 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <35up48$1o4h@yuma.ACNS.ColoState.EDU>
Source record: 116178

In article <35taft$k0e@vortex.eng.sc.rolm.com> montp@vortex.eng.sc.rolm.com (Mont Pierce) writes:
>
>Mainly, in practice it just doesn't seem to matter too much.

HEY, who said you could be that realistic? You'd better FTP some files before you get too lost in the real world.

;-)

2743. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 14:37:30 UTC
From: jwl@walter
Message-ID: <1994Sep23.093730.20145@walter.cray.com>
Source record: 116180

Ian G3SEK (G3SEK@ifwtech.demon.co.uk) wrote:

: In a previous article Russ Renaud VA3RR/AA8LU wrote:
: >
: > In a previous article, charlos@rivm.nl (Charlos Potma) says:
: >
(much interesting info deleted)
: If you want to keep the board but not the IC (as in a repair), your main
: priority is to protect the tracks which are very fragile. Snip the legs of
: the IC off, one at a time, using very fine-nosed cutters which don't lever
: against the body of the IC and tear up the tracks. Then carefully desolder
: the loose bits from the individual tracks.

: If you want to keep both the board and the IC, use the wire method, but work
: v e r y s l o w l y and carefully to avoid tearing the tracks.

: Hope this helps you decide which is the best way...

: --
: 73 from Ian G3SEK | Editor, The VHF/UHF DX Book
: Abingdon, England |
: g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)
Just an observation, I have used a Dremel tool with a cutting disk to
cut the old part away. It is quite a bit quicker for things like 40 pin
ICs, but not if you have to go find the Dremel. 8^)

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

2744. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 15:46:40 UTC
From: rdcole@crl.com
Message-ID: <35ut90$a6i@crl4.crl.com>
Source record: 116179

Mont Pierce (montp@vortex.eng.sc.rolm.com) wrote:
: Pros for not using balun:
: no RF lost because of balun

: Cons for not using balun:
: some rf goes down the outside of the coax
: small distortion to wave pattern caused by rf on coax shield

Power running down the Coax does not add to the radiated signal.
When using a balanced design antenna, most designs are, you should
balance the system to get the most signal into the air.

Ron
N5HYH
KZEP-AM/FM

2745. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 16:02:47 UTC
From: hlester@nemo.as.arizona.edu
Message-ID: <35uu77$n6t@news.CCIT.Arizona.EDU>
Source record: 116181

In article <35taft$k0e@vortex.eng.sc.rolm.com> montp@vortex.eng.sc.rolm.com (Mont Pierce) writes:
>
>Here are some of the pros and cons for using and not using a balun:

- snip -

> Cons for using a balun:
> small amount of RF is lost going through the balun
>
>Mainly, in practice it just doesn't seem to matter too much.

...Unless one uses a balun of a bad design. In that case, such a balun is WORSE than no balun at all.

Not all baluns are created equal(ly) effective.

Howard Lester

2746. Re: Plans for 2M 50W solid state amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 16:32:15 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <35uvuf$jdr@usenet.rpi.edu>
Source record: 116195

Muenzler, Kevin (MUENZLERK@uthscsa.EDU) wrote:

: --Boundary (ID 2+aB7dyVtEJniohzoY1g2w)
: Content-type: TEXT/PLAIN

: In digest 281 Jay Porter writes:

: >I am looking for information or plans for building a 50W solid state
: >amp for use in the 2m or 2m/440 bands. I am interested both in complete
: >circuit diagrams or suggestions for power transistors that I can use to
: >build these amps. Any information would be appreciated. Thanks.

: Jay,
: Check some of the OLD ARRL handbooks (early 80's and late 70's).
: They had a couple of amps (FM) that you might be interested in.
: One was a 10-15W for handytalky and one was a 10W in 60W out.
: Both were solid state and used fairly common transistors. If you
: can't get one of these handbooks I'd be glad to FAX or snail-mail
: you a copy of them.

Yeah that's a good place to start. Depending on your level of
experience and level of interest in really building it from scratch,
you might condider another option: using a hybrid module. I haven't
looked carefully at it, but once you get to buying all of the good
components like UNELCO caps etc, it might even be cost effective.

From my most recent RF parts sheet:

F Pin Pout $$$$

144-148 0.4 43 72

430-450 0.4 45 105

I left out the part numbers, because there are many types to
choose from, these are just examples. They are a bit pricey, but they
are very easy! If it were me, I might consider looking for a surplus
2-way radio.. and stealing the PA... that is if I just wanted to get
the power.

-Lance, procrastinating student

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2747. Re: Plans for 2M 50W solid state amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 16:34:05 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <35v01t$jdr@usenet.rpi.edu>
Source record: 116196

Oh, what I forgot to suggest:
try to get your hands on a copy of the motorola rf data
books... preferably the 88 edition.. they have appnotes and usually a
test circuit for most of their devices.
-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2748. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 17:41:24 UTC
From: frankb@moto.sr.hp.com
Message-ID: <CwLFt1.9Hp@srgenprp.sr.hp.com>
Source record: 116182

On Sat, 17 Sep 94 22:10:56 EDT, Mike Czuhajewski (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
& I come across a lot of circuit boards with various types of surface
& mount devices (SMDs) on them, and was wondering if it is practical to
& unsolder them and reuse them in some homebrew projects which require
& SMDs, or if it would be far, far better in every respect to simply bite
& the bullet and spend a fair sum of money to build up a stock of fresh
& SMDs from a catalog? When you remove SMDs and subsequently solder them
& again, are they likely to survive? Or do they tend to sustain a lot of

I've found that ceramic capacitors are very fragile, and usually won't survive re-use. If they do they are not reliable. Other parts are fine to re-use.

--
Frank Ball 1UR-M frankb@sr.hp.com (707) 794-4168 work
Hewlett Packard (707) 794-3844 fax (707) 538-3693 home
1212 Valley House Drive IT175 XT350, Seca 750, '62 F-100, PL510
Rohnert Park CA 94928-4999 KC6WUG AMA DoD #7566 NMLRA I'm the NRA.

2749. Re: Plans for 2m 50W solid state amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 17:49:40 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Sep23.114940.1@ualr.edu>
Source record: 116190

In article <21SEP199417110459@summa.tamu.edu>, jrp1175@summa.tamu.edu (PORTER, JAY ROGER) writes:
> I am looking for information or plans for building a 50W solid state
> amp for use in the 2m or 2m/440 bands. I am interested both in complete
> circuit diagrams or suggestions for power transistors that I can use to
> build these amps. Any information would be appreciated. Thanks.
>
>
> Jay Porter
> Texas A&M University
> j-porter@tamu.edu

Hi Jay:
Our club is in the process of building a 2M amp from plans found in november 93 "73 AMATEUR RADIO TODAY" page 10. It is supposed to provide about 25-30 watts with 2-3 in. I am currently getting the parts list together so I can give our members an approximate cost. You can get HF, VHF and UHF power transistors from RF PARTS, 435 South Pacific St., San Marcos, CA 92069, 1-800-737-2787 (orders only) or 619-644-0700 (info/technical).
--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail ldheiss@athena.ualr.edu
UALR ARC Technical Advisor
call: KC5CVL
****

2750. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 17:50:09 UTC
From: tomb@lsid.hp.com
Message-ID: <CwLG7L.G9G@hpcvsnz.cv.hp.com>
Source record: 116034

Russ Renaud (ae517@FreeNet.Carleton.CA) wrote:

: They don't put a heat sink on all the leads of the device when the devices
: are wave-soldered during the manufacturing process. These days, it's only
: the very delicate devices that are hand-soldered onto the board,
: everything else is wave-soldered. Last visit to an electronics
: manufacturing facility, there was even a machine that automated that process!
: The SMT facility was simply amazing, as well.

SMT parts can be wave-soldered, but it's pretty tough with fine-pitch
parts. Much more likely they are IR or vapor-phase reflow soldered.

With regard to removing parts: if the SMT board you are trying to get
parts off of has parts mainly on one side, or if the parts on the second
side are two-leaded ones that are easy to remove with a pair of soldering
irons (used like chop sticks or tweezers) first, you can get the remaining
ones off the other side if they aren't glued down by putting the board in a
pre-heated oven under a broiler element. I put the board up on blocks
above a sheet of aluminum that will stay cool enough to not damage the
parts; practice with spacing and timing, and take it out just after the
parts fall off. With this method, you are heating through the board
material, and the parts have at least some protection from the heat.
Lighter parts may adhere by surface tension; a quick shake immediately
after opening the oven may help in this case. If the parts are glued on,
you should probably forget trying to remove them for reuse. -- I use an
electric oven for this; dunno how it would work in a gas oven.

2751. Re: duplexer for 2M, the originator.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 18:05:12 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Sep23.120512.1@ualr.edu>
Source record: 116183

In article <milcomCwFKxJ.68q@netcom.com>, milcom@netcom.com (wayne roberts) writes:
> ldheiss@ualr.edu wrote:
> : We have the "ARRL Antenna Book", however the information on building a
> : duplexer leaves one a bit hungry. Anyone who has additional information
> : on building a duplexer please e-mail me so I can correspond with you.
>
> Also recall the arrl handbook talks about alternative to using
> duplexers. Isolation can also be achieved by split site, receiver &
> transmitter in different locations, but not too far apart, linked by
> another band.
> Another alternative is same site operation using separate transmit &
> receive antennas vertically separted as much as possible. Using RG214
> doulbe shielded is a must, but hardline is necessary for minimal loss.
> Adittional isolation can be achieved with a simple coffee can notch
> filter on the receiver, and maybe another on the transmitter/PA.
> If you can build cavaties as well as wacom, telewave & celwave, there
> is greate fortune in your future.
>
Yes Yes, I read all of that too, but our situation doesn't really allow either
option. We can't do split site and we can't get enough vertical seperation to
achieve 100 dB of attenuation. I would rather see the money for the extra
antenna and coax (evey 5 years) go to the cost of the duplexers. I have to
many irons in the fire and haven't had time to start looking for compontents.
I have not recieved info from anyone who has constructed a 2M duplexer. If
I do I will pass it on.
--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail ldheiss@athena.ualr.edu
UALR ARC Technical Advisor
call: KC5CVL
****

2752. ICOM IC260 Interface Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 18:28:45 UTC
From: gustin@eng.iac.honeywell.com
Message-ID: <35v6ot$oe3@adm09.iac.honeywell.com>
Source record: 116187

I am looking for any info on the ACC plug interface to the
ICOM 260 all-mode 2M tranceiver. I am trying to program the
frequency etc thru this interface. Any info would be appreciated

Jay Ke7ot

2753. Pspice

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 18:35:17 UTC
From: JOHNZ@UTXVMS.CC.UTEXAS.EDU
Message-ID: <JOHNZ-2309941337350001@edb252e.edb.utexas.edu>
Source record: 116185

Do any of you use pspice on a Mac? I downloaded a copy but am unable to
get it to run. My system crashes..with a bad F-line instruction message.
Any ideas?
Thanks...John

2754. Re: Troubleshooting again .. oscillator this time !

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 18:57:27 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-2309941457270001@k4dii.ksc.nasa.gov>
Source record: 116184

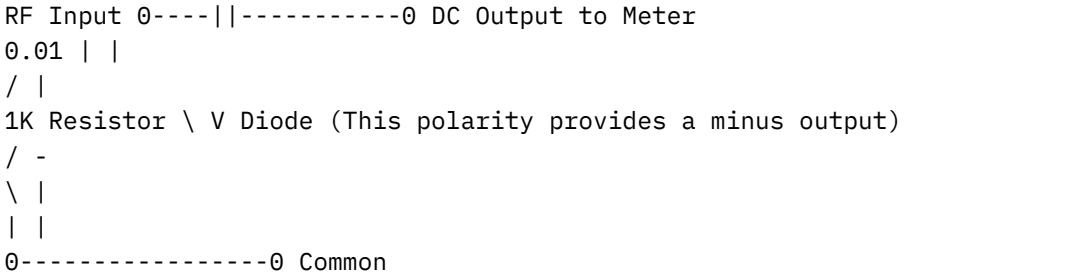
In article <CwH36G.Lp@abacus.demon.co.uk>, dmb@abacus.demon.co.uk (David Byrne) wrote:
I'll get this thing working yet !

David-

One thought- The circuit looks like it might work, but requires proper phasing of the coil windings. It might suddenly come to life if you reverse ONE of the windings! If not, the turns ratio may be such that reversing primary and secondary may provide adequate feedback for oscillation.

For an RF probe, a series capacitor from the point being measured, to a shunt diode and resistor to ground, may do the job. I suggest 0.01 microfarad ceramic capacitor, 1N4148 or 1N914 silicon switching diode and 1K ohms, 1/4 watt resistor. These parts are not critical. I suggest keeping the leads short and direct.

The drain terminal (output) of the FET looks like a good spot to measure. You might build-in the diode circuit, to provide a test point for circuit tuning or future troubleshooting.



73, Fred, K4DII

2755. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 19:14:22 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-2309941514220001@k4dii.ksc.nasa.gov>
Source record: 116186

In article <1994Sep17.221056.23096@wb3ffv.wb3ffv.ampr.org>,
Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski) wrote:
> ....When you remove SMDs and subsequently solder them
> again, are they likely to survive?.......
> .... Solder paste and hot air reflow would not be
> used, since this is for work at home.)

Mike-

I'm sure there is a limit to the temperature these devices can take, but it may he higher than some people think. The main problem, as I see it, is that the solder required for these devices, is NOT ordinary tin-lead alloy.

If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with the silver that is fired onto the component. The result is that you can no longer solder to it. You must use something like a "silver-saturated" solder, or the appropriate solder paste. (Note: this is not the same as "silver solder", which has a much higher melting point.)

73, Fred, K4DII

2756. Mod for RS FM Broadcast yagi for 2m?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 20:22:06 UTC
From: cscon0151@uoft02.utoledo.edu
Message-ID: <CwMC7B.K1K@utnetw.utoledo.edu>
Source record: 116199
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Looking for the instructions to modify Radio Shack FM Broadcast band (yagi or log ?) for transmitting on 2m. Heard it was on one of the rec.amateur newsgrops from a fellow ham. A Emailed copy of this would be very helpful (and save bandwidth)!

Thanks...

Brad Steinman, N8ZRP
The University of Toledo
Internet: cscon0151@uoft02.utoledo.edu (131.183.1.4)
stu0105@uoft01.utoledo.edu (131.183.1.2)
N8ZRP@wsu.n8fow.ampr.org (44.102.48.2)
Packet : N8ZRP@w2xo.#swpa.pa.usa.noam (Amateur Radio Mail Gateway)
* Member of the All-Ohio Scanner Club (OH-48-1859) * yah...

2757. Where to find "micro" phone plug

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 20:48:00 UTC
From: au156@yfn.ysu.edu
Message-ID: <35veu0$3o2@news.ysu.edu>
Source record: 116188

Looking for a 3/32 inch (2.5 mm) three contact (stereo)
miniature phone plug for a Alinco HT to TNC cable.

Gad, these are hard to find! Best I can do so far is
an adapter from Radio Shack, not just a plug. Any
suggestions?

Hank, N1LTV

2758. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 22:25:18 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <35vkke$ekk@tekadm1.cse.tek.com>
Source record: 116189

montp@vortex.eng.sc.rolm.com (Mont Pierce):

>. . .
>Here are some of the pros and cons for using and not using a balun:
> (speaking purely of 50 ohm to 50 ohm baluns)

> Pros for using a balun:
> matches the balance dipole to the unbalanced coax
> no rf should run down the outside of the coax

> Cons for using a balun:
> small amount of RF is lost going through the balun
>. . .

The only loss in a current balun made with an open-air coil of coax or external ferrite beads is due to I-squared-R loss where the I is the undesired current flowing on the outside of the coax. If it's significant, the current on the outside of the coax is large (indicating a need for the balun unless you want the current there) and the balun isn't well designed.

The desired current, on the inside of the coax, is totally unaffected by the presence of the balun.

Roy Lewallen, W7EL
roy.lewallen@tek.com

2759. Re: Plans for 2m 50W solid state amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-23 22:49:16 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <35vm1c$pf3@adm09.iac.honeywell.com>
Source record: 116197

jrp1175@summa.tamu.edu (PORTER, JAY ROGER) wrote:
> I am looking for information or plans for building a 50W solid state
> amp for use in the 2m or 2m/440 bands. I am interested both in complete
> circuit diagrams or suggestions for power transistors that I can use to
> build these amps. Any information would be appreciated. Thanks.

I would suggest the Motorola MRF247. Approx 50w out for 5w in. Available
from RF Parts, San Marcos, Ca. 1-800-737-2787

For cct details, see the Motorola data books. App Note AN791

GL es 73s de Alf NU8I/G4ABB

2760. Re: Where to find "micro" phone plug

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-24 02:10:05 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <CwM3Cu.KG7@utnetw.utoledo.edu>
Source record: 116198

In article <35veu0$3o2@news.ysu.edu>, au156@yfn.ysu.edu (Hank Riley) writes:
>
>
>Looking for a 3/32 inch (2.5 mm) three contact (stereo)
>miniature phone plug for a Alinco HT to TNC cable.
>
>Gad, these are hard to find! Best I can do so far is
>an adapter from Radio Shack, not just a plug. Any
>suggestions?
>
>Hank, N1LTV

I got one a a local electronics parts store (not RadioShack) for around $1
I have seen them in Mouser's catalog and a few others. If you can't find
one email me with your snail mail address and I can send you one.

73
Patrick
KB8PYM
pouelle@uoft02.utoledo.edu
pouelle@utphya.phya.utoledo.edu

2761. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-24 14:31:21 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep24.143121.5833@ke4zv.atl.ga.us>
Source record: 116200

In article <35ut90$a6i@crl4.crl.com> rdcole@crl.com (Ron Cole) writes:
>Mont Pierce (montp@vortex.eng.sc.rolm.com) wrote:
>: Pros for not using balun:
>: no RF lost because of balun
>
>: Cons for not using balun:
>: some rf goes down the outside of the coax
>: small distortion to wave pattern caused by rf on coax shield
>
>Power running down the Coax does not add to the radiated signal.
>When using a balanced design antenna, most designs are, you should
>balance the system to get the most signal into the air.

Oh, it most certainly *does* add to the radiated signal. It adds
vectorially however, and may not give you the pattern you expect.
With a simple dipole, though, the pattern isn't much to write home
about anyway unless you're using the nulls off the ends for some
purpose.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | | gary@ke4zv.atl.ga.us

2762. High Voltage Screen Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-24 15:57:26 UTC
From: hbrown@nadir.resd
Message-ID: <1994Sep24.155726.17064@knight.vf.ge.com>
Source record: 116204

I'm looking for a reference to a high voltage screen power supply for an RF high power amplifier. I'd like a shunt regulated supply so that it has a low impedance and preferrable variable voltage around 300 to 400 volts or so. I know that basic regulators can be made using VR tubes but I'm looking for something more robust and with some adjustment capability. I'm sure that I've seen one in some magazine in the past but my memory fails me. Anyone remember seeing one and where?

73, Harry, W3IIT
hbrown@resd.vf.ge.com

2763. Re: Plans for 2M 50W solid state amp

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-24 19:45:22 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CwnG7o.2Kr@news.Hawaii.Edu>
Source record: 116201

Rather than going QRO (which might cause problems for others on the band) why not consider improving your antenna? If you're having trouble at home getting into a particular repeater try building a Yagi with as many elements as you desire.

Years ago I lived in a fringe area so I put up a vertical dipole with a `rounded' corner reflector behind it (more of a parabolic shape than a corner/square shape); needless to say I was no longer in a fringe area...

The idea of using brute force to get into a repeater seems unnecessary and wasteful (unless you need the amp for mobile operation; if so then please use it sparingly).

.73,
Jeff NH6IL QRPp on HF CW

2764. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-24 21:14:17 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CwnKBu.1MB@srgenprp.sr.hp.com>
Source record: 116202

Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:

[Re: soldering surface-mount devices]

: If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with
: the silver that is fired onto the component. The result is that you can
: no longer solder to it. You must use something like a "silver-saturated"
: solder, or the appropriate solder paste. (Note: this is not the same as
: "silver solder", which has a much higher melting point.)

Wow, I never heard that before. We use standard tin-lead solder all the
time around here for soldering SMT devices.

AL N1AL

2765. Re: Where to find "micro" phone plug

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-25 15:06:03 UTC
From: acs@news.sccsi.com
Message-ID: <3643kr$6k1@tattoo.sccsi.com>
Source record: 116203

Hi Hank:
I bought a stainless steel stereo plug (I think it's stainless)
locally for $1.75 to use on my IC2-AT mike socket for packet. It turned
out to be too long so I went back to the Radio Shack 2 cond. plug. Works
fine. The stainless one was purchased at City Electronics in Houston, TX.
He doesn't do mail order. One man show in a shop full of builder's parts!

Let me know if you need some hard to get parts and I'll see if it's
available here.

73 de A.C., W5EZM

pouelle@uoft02.utoledo.edu wrote:
: In article <35veu0$3o2@news.ysu.edu>, au156@yfn.ysu.edu (Hank Riley) writes:
: >
: >
: >Looking for a 3/32 inch (2.5 mm) three contact (stereo)
: >miniature phone plug for a Alinco HT to TNC cable.
: >
: >Gad, these are hard to find! Best I can do so far is
: >an adapter from Radio Shack, not just a plug. Any
: >suggestions?
: >
: >Hank, N1LTV

: I got one a a local electronics parts store (not RadioShack) for around $1
: I have seen them in Mouser's catalog and a few others. If you can't find
: one email me with your snail mail address and I can send you one.

: 73
: Patrick
: KB8PYM
: pouelle@uoft02.utoledo.edu
: pouelle@utphya.phya.utoledo.edu

--
A. C. Spraggins acs@sccsi.com
South Coast Computing Services, Inc. w5ezm@sugarland.ampr.org
1811 Bering, Suite 100 (713) 917-5000
Houston, TX 77057 (713) 917-5005 fax

2766. Can combine two 50MHz Tx signals?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 01:27:58 UTC
From: acooney@netcom.com
Message-ID: <acooneyCwpqqn.2J3@netcom.com>
Source record: 116205

Greetings:

I'm looking for your suggestions on combining two or more six meter signals. These are in the 100 milliwatt range, and are relatively closely spaced (100-200 KHz). I need a broadband solution (untuned) if possible, so that the transmitter frequencies can be varied within a few hundred kilocycles or so without altering the need for a 'tune up'.

What the heck is this for, you ask? I work for a company that builds remotely controlled models for the movie industry. We use six meter RC equipment with one power amp and antenna per RC 'channel', and that can add up to a rack of power amps and a field of antennas for a given shoot. We'd like to be able to combine at least two signals before amplification -- to cut the number of amps and antennas we have to fuss with.

Any ideas? Cheers all. :)

Alan
WD6DES

2767. 2 Meter SWR meter schematic????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 05:32:10 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <Cwq21n.lys@rahul.net>
Source record: 116207

does anyone out there by chance have a schematic for a swr meter for 2 meters? or know of a place where i can get one?

thank you,
mlyon@rahul.net

--
Mike Lyon <mlyon@rahul.net>

2768. Re: Can combine two 50MHz Tx signals?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 06:34:30 UTC
From: jdow@BIX.com
Message-ID: <jdow.780561270@BIX.com>
Source record: 116206

acooney@netcom.com (Alan Cooney) writes:

>Greetings:

>I'm looking for your suggestions on combining two or more six meter
>signals. These are in the 100 milliwatt range, and are relatively
>closely spaced (100-200 KHz). I need a broadband solution (untuned)
>if possible, so that the transmitter frequencies can be varied within
>a few hundred kilocycles or so without altering the need for a 'tune up'.

>What the heck is this for, you ask? I work for a company that builds
>remotely controlled models for the movie industry. We use six meter
>RC equipment with one power amp and antenna per RC 'channel', and that
>can add up to a rack of power amps and a field of antennas for a given
>shoot. We'd like to be able to combine at least two signals before
>amplification -- to cut the number of amps and antennas we have to fuss
>with.

>Any ideas? Cheers all. :)

>Alan
>WD6DES

Alan, you can resistively combine the signals quite easily. Or you can use a fairly simple "balun" arrangement to combine the signals. If you try to do so at the amplifier output you must use the combiner (balun) approach. And when you do you will take an instant 3dB power loss to the antenna. (Half goes into the load and half into the normally zero power dummy load resistor. It is only zero power when you are combining two copies of the same signal that are at the same amplitude an 180 degrees out of phase.)

If you try to amplify the combined signals after combining you MUSt use a linear amplifier and run it such that none of its intermod products on any of the signals into it "leak" into portions of the spectrum you are not licensed to use at any power levels that someone licensed to use those frequencies might consider injurious. (The fine can ruin a whole day, each day you do it.) True linear amplifiers cost much more per watt out than do typical FM amplifiers.

If I were designing the control system from the ground up I'd go digital and use TDMA (Time Division Multiple Access) so that I could control all the signals on one power amplifier and antenna system. But you'd have to select an appropriate chunk of spectrum for it if you wanted to do it, I suspect.
{^_^} Joanne Dow, Editor Amiga Exchange, BIX
jdow@bix.com

2769. Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 12:05:00 UTC
From: elendir@enst.fr
Message-ID: <366ddd$9q@cismsun.univ-lyon1.fr>
Source record: 116208

Hi !

Does anybody out here have any design formulae to build narrow-band inter-
digital filters ?
Typically, I need a filter centered on about 1297 MHz with more than 90 dB
insertion loss at 1291 MHz. The French SHF repeater shift is - 6 MHz.

Thanks,
Vincent

--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2770. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 12:22:14 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep26.122214.16291@ke4zv.atl.ga.us>
Source record: 116211

In article <CwnKBu.1MB@srgenprp.sr.hp.com> alanb@hpnmarb.sr.hp.com (Alan Bloom) writes:
>Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
>[Re: soldering surface-mount devices]
>
>: If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with
>: the silver that is fired onto the component. The result is that you can
>: no longer solder to it. You must use something like a "silver-saturated"
>: solder, or the appropriate solder paste. (Note: this is not the same as
>: "silver solder", which has a much higher melting point.)
>
>Wow, I never heard that before. We use standard tin-lead solder all the
>time around here for soldering SMT devices.

Heh, heh, maybe that's why Tektronix gear is so much more reliable.
They used to include a little role of silver bearing solder in
every instrument so the tech could fix it right.

(In the old days that was because of the silver bearing contacts on
their ceramic terminal strips, but it applies to modern SMDs too.)

It's true that using ordinary solder can cause the silver to leach
out of the contacts on SMD components. That can lead to connection
failures. That's primarily an issue with leadless SMDs like caps
and resistors. It doesn't apply to leaded ICs. Their leads are
tin plated, and solder fine with ordinary solder.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2771. Re: Can combine two 50MHz Tx signals?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 12:28:47 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep26.122847.16374@ke4zv.atl.ga.us>
Source record: 116212

In article <acooneyCwpqqn.2J3@netcom.com> acooney@netcom.com (Alan Cooney) writes:
>Greetings:
>
>I'm looking for your suggestions on combining two or more six meter
>signals. These are in the 100 milliwatt range, and are relatively
>closely spaced (100-200 KHz). I need a broadband solution (untuned)
>if possible, so that the transmitter frequencies can be varied within
>a few hundred kilocycles or so without altering the need for a 'tune up'.
>
>What the heck is this for, you ask? I work for a company that builds
>remotely controlled models for the movie industry. We use six meter
>RC equipment with one power amp and antenna per RC 'channel', and that
>can add up to a rack of power amps and a field of antennas for a given
>shoot. We'd like to be able to combine at least two signals before
>amplification -- to cut the number of amps and antennas we have to fuss
>with.

Ahem. If you really mean the 6 meter amateur band, I want the name
of the company. Using amateur radio for commerical gain is still
illegal.

If you mean commercial frequencies near 6 meters, then the way to
get around the rack of amps and field of antennas is to use Wilkinson
combiners on all the transmitters and feed them into a single linear
amplifier. Make sure the amp is really linear though. One that will
pass a broadcast TV signal will work. A low band CATV master distribution
amplifier would be a good choice. That can then feed a single antenna.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2772. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 12:32:47 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Sep26.123247.16457@ke4zv.atl.ga.us>
Source record: 116213

In article <366ddd$9q@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:
> Hi !
>
> Does anybody out here have any design formulae to build narrow-band inter-
>digital filters ?
> Typically, I need a filter centered on about 1297 MHz with more than 90 dB
>insertion loss at 1291 MHz. The French SHF repeater shift is - 6 MHz.

Ouch! That's tough. To get that much rejection, your insertion loss on
the desired receive channel is going to be really high, probably as much
as 10 db. I doubt that will be acceptable. You should stick to standard
cavity notch duplexers instead.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2773. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 13:01:21 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <780726403wnr@ifwtech.demon.co.uk>
Source record: 116209

> Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
> >
> : If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with
> : the silver that is fired onto the component. The result is that you can
> : no longer solder to it. You must use something like a "silver-saturated"
> : solder, or the appropriate solder paste. (Note: this is not the same as
> : "silver solder", which has a much higher melting point.)
>
... or to put it another way, ordinary solder dissolves the silver out of the
plating on the component. Obviously this phenomenon only affects ceramic-bodied
compnents such as Rs, Cs and Ls. ICs and other devices with solid metal
legs can be resoldered for as long as they hold together :-)

> Wow, I never heard that before. We use standard tin-lead solder all the
> time around here for soldering SMT devices.

Well, yes - ordinary solder is OK for first-time use of components, but
each repeated application to reclaimed components (and that includes 'cleaning'
old solder off them) makes the ceramic-metal connections less reliable.

I never re-use chip Rs (they only cost pennies), and always suspect the
joint continuity of re-used chip Cs.

Regarding the hot air / blowtorch method of stripping boards, GM4ANB recommends
doing it over a bowl of cold water. If the components (ICs in particular) are
sealed as they should be, they'll benefit from the immediate cooling.

73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

2774. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 13:21:58 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <366htm$oi5@usenet.rpi.edu>
Source record: 116210

Elendir (elendir@enst.fr) wrote:
: Hi !

: Does anybody out here have any design formulae to build narrow-band inter-
: digital filters ?
: Typically, I need a filter centered on about 1297 MHz with more than 90 dB
: insertion loss at 1291 MHz. The French SHF repeater shift is - 6 MHz.
Wow, holy unloaded Q batman!

anyway, there supposedly is a design program out there that
was published... I think it's written in basic. I don't have it
personally though.

-L

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2775. WTB: a few NE561 pll chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 13:51:09 UTC
From: jbrown@cybernetics.net
Message-ID: <366jkd$38p@jabba.cybernetics.net>
Source record: 116214
Cross-posted to: rec.audio.tech,sci.electronics.repair,rec.radio.amateur.homebrew

Am trying to build a project requiring a Signetics NE561. I am unaware of any substitute with the same set of features. Can anyone spare 2-4 pieces from their old parts bins?

Thanks, Jeff

--
Jeff Brown jbrown@cybernetics.net

2776. Specs: "RCA 400 40341" "2N6485"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 15:26:01 UTC
From: jimn0oct@aol.com
Message-ID: <366p69$m7@newsbf01.news.aol.com>
Source record: 116215

My meager selection of data books do not have any information on the the following:

RCA 400 or 40341 (device has both of these markings)

2N6485 which is a tiny metal cased 6-pin device.

The RCA device was pulled out of a "50 MHz oscillator" purchased at a hamfest for $1. The thing was cold soldered (no wonder it didn't work).

The other device was pulled from a PC board of some type.

Thanks for any answers for these two--I would like to use the RCA device at two meters if it is rated for that high a frequency.

72,73, jim n0oct

2777. Re: Quads and baluns?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 15:29:19 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <366pcf$2a1i@info2.rus.uni-stuttgart.de>
Source record: 116216

In article <1994Sep22.045923.4921@egreen.wednet.edu>,
John Mollan - Harm <jmollan@egreen.iclnet.org> wrote:
>
>When I made quagis for 144 and 220 Mhz, I never used any type of balun.
>None were commercially available and every new connection privides loss.
>
From an OM, who has calculated many beams, I was told that a properly symmetric
feed becomes increasingly important with increasing antenna gain.
Therefore a folded dipole with cable balun is better than a gamma
match.

73, Moritz DL5UH

2778. Re: duplexer for 2M, the

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 16:43:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9409261820391867@kbsbbs.com>
Source record: 116124

Greetings Larry:

I have been a radio amateur for about 30 years, I have my commercial ticket and my carreer was in telecommunications engineering. I have been involved in two home brew 2 metre duplexer projects.

I can say from experience that building home brew duplexers is a major project that requires the tools and expertise of a good machinest plus the availability of expensive test equipment to properly tune up the duplexers once they are constructed. But it can be done with many many man hours of patient effort and they can be made to perform near equal to commercial duplexers but may never be as stable. A duplexer project was described in an old version of FM REPEATERS FOR THE RADIO AMATEUR ARRL publication (1972). They were fabricated from 4 inch copper drainage pipe. If you decide to build this set I have some advise about the harness cable lengths.

My advise in general is that unless you have a lot of time available, get a great deal of personal satisfaction out of making your own duplexers, have the availability of a good machinest and access to a good spectrum analyzer with a tracking generator option you should put an effort into finding a good set of commercial duplexers from the used equipment market. Some commercial duplexers have been showing up on the surplus market for about $300 which is probably less than it would cost to build a set. Be carefull however to ensure that they can be tuned down to the 2 metre band. Some of the hybrid ring duplexers had the plunger rods cut off so they could be rack mounted and the cable harness is frequency sensitive. It can cost $300 for a new double shielded cable harness! Don't bother trying to utilize single shielded coax for the harness or the transmitter and receiver antenna cables. Single shielded coax is ok for the antenna feedline but you may wish to use a type of heliax there for loss considerations.

It takes man months of effort to build a set of duplexers and it can be enough to fold a repeater club if you do not have the facilities and expertise available.

Good luck with your project and most importantly have fun with it.

73
Tom, VE7TMA

L>Yes Yes, I read all of that too, but our situation doesn't really
L>allow either option. We can't do split site and we can't get enough
L>vertical seperation to achieve 100 dB of attenuation. I would rather

L>see the money for the extra antenna and coax (evey 5 years) go to the
L>cost of the duplexers. I have to many irons in the fire and haven't
L>I had time to start looking for compontents. have not recieved info
L>I from anyone who has constructed a 2M duplexer. If do I will pass it
L>on. --
L>**
L>******** Larry Heiss
L>University of Arkansas @ Little Rock
L>Laser Applications Lab
L>e-mail ldheiss@athena.ualr.edu
L>UALR ARC Technical Advisor
L>call: KC5CVL
L>**

Very Best Regards,

T.M. Alldread

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

2779. Need Help: measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 17:15:05 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-260994091505@tomkreyche.zdlabs.ziff.com>
Source record: 116119

Dear homebrewers,

I'm working on a commerical seismometer (for measuring distant earthquakes) and don't understand some coil phenomena.

The instrument has an coil of very fine wire (about #44) wound on a hollow plastic core, probably >> 5000 turns, about 1.5 inches in diameter. Horizontal earth movement causes this coil to move in and out of a strong magnet, which generates a changing voltage.

If I remove the magnet and measure the coil resistance, it shows a rock steady 48.1 k ohms.

With the magnet in place around the coil and with the coil locked so it can't move, the coil resistance bounces slowly betwee 47.6k and 48.5k.

The measurements are made at a stable room temperature using a fluke 75 multimeter. I imagine the meter works by running a small current though the DUT and measuring voltage across a resistor, so naturally any change in current in the DUT will play hell with the measurement.

Why does the resistance appear to change with the magnet in place? Is it simply due to very small thermal movements, even though the coil is locked? or is something else going on, like changes in the earth's magnetic field or something more mundane?

Thanks, Tom KG6YJ

2780. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 17:39:15 UTC
From: tomb@lsid.hp.com
Message-ID: <CwqzpG.HD3@hpcvsnz.cv.hp.com>
Source record: 116035

Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
: I'm sure there is a limit to the temperature these devices can take, but
: it may he higher than some people think. The main problem, as I see it,
: is that the solder required for these devices, is NOT ordinary tin-lead
: alloy.

: If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with
: the silver that is fired onto the component. The result is that you can
: no longer solder to it. You must use something like a "silver-saturated"
: solder, or the appropriate solder paste. (Note: this is not the same as
: "silver solder", which has a much higher melting point.)

Hmmm. This "not ordinary solder" goes against what we do here, so I thought I'd have a look in a component supplier catalog. I only checked Kemet, but I'm pretty sure others are similar. They specifically mention 62%Sn standard tin-lead solder for mounting. They also diagram their end terminations--this was specifically on multilayer ceramic capacitors. The end terminations are thick film silver, electroplated with nickel, electroplated with pure tin. They call these "solder-guard" or some such trademarked term.

One thing of interest was their recommended mounting, in which the capacitors are spaced from their pads by a significant amount of solder; the solder is supposed to accomodate the differential thermal expansion between the board material and the capacitor substrate. They specifically recommended against mounting the capacitor hard against the board (pads). Just how you accomplish this in an automated IR or vapor phase reflow system I don't know, especially with components on both sides of the board.

Cheers,
Tom -- K7ITM

2781. Re: Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 17:43:08 UTC
From: geertj@ripe.net
Message-ID: <Cwqzvx.K9J@inter.NL.net>
Source record: 116217

In <780726403wnr@ifwtech.demon.co.uk> G3SEK@ifwtech.demon.co.uk (Ian G3SEK) writes:
>Regarding the hot air / blowtorch method of stripping boards, GM4ANB recommends
>doing it over a bowl of cold water. If the components (ICs in particular) are
>sealed as they should be, they'll benefit from the immediate cooling.

Is that true? I fear that the temperature shock is likely to cause
micro-cracks in the plastic body.

Geert Jan

2782. Re: High Voltage Screen Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 18:39:45 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <3828210wnr@ifwtech.demon.co.uk>
Source record: 116118

Harry W3IIT wrote
>
> I'm looking for a reference to a high voltage screen power supply for an RF high power amplifier.
>I'd like a shunt regulated supply so that it has a low impedance and preferrable variable voltage
>around 300 to 400 volts or so. I know that basic regulators can be made using VR tubes but I'm
>looking for something more robust and with some adjustment capability.

There are two in the _VHF/UHF_DX_Book_ (from ARRL) which were designed for 4CX250/350s and similar. They use op-amp regulation with either bipolar or power MOSFET shunt elements, and are well proven designs with good protection against short-circuits and flashover. Regulation is +-100mV or better - more than you'll ever need.

I've had a similar MOSFET design running for about 3 years which also has opto-coupled overcurrent shutdown. There's a new PCB for this 'in beta' which will be configurable for voltages from 200 up to about 600, in any grounding configuration, and should be a universal retrofit for existing screen supplies using VR tubes and zener stacks. More details later...

(Excuse the boost for the book, but that's where several of us assembled a lot of good information that wasn't easily available anywhere else.)

73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

2783. Re: Where to find "micro" phone plug

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 20:57:38 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <367ck2$ghb@adm09.iac.honeywell.com>
Source record: 116120

au156@yfn.ysu.edu (Hank Riley) wrote:

> Looking for a 3/32 inch (2.5 mm) three contact (stereo)
> miniature phone plug for a Alinco HT to TNC cable.

> Gad, these are hard to find! Best I can do so far is
> an adapter from Radio Shack, not just a plug. Any
> suggestions?

> Hank, N1LTV

I had the same problem with my DJ1F/T and KPC3. Maybe these
guys don't exist. So I thought, so what if it is an adaptor,
just make the cable 1/2 inch shorter and use a 3.5mm plug.
It has been in use for a year and a half with no reliability
problems.
OK, so it may not look so 'professional', but REAL ham shacks
are not not supposed to look good. (;-)

73s de Alf NU8I/G4ABB

Alf Green | Tel (602) 863 5842 | An organised person is just
Honeywell IAC | Fax (602) 789 4990 | too lazy to hunt for things.
Phoenix AZ | alf@agreen.iac.honeywell.com |
==========

2784. Final Positioning?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-26 21:11:58 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <367deu$2tr6@yuma.ACNS.ColoState.EDU>
Source record: 116121

Hello I have a linear amplifier that has had the finals removed. I have the new finals. They are npn, but i'm not sure how to tell wich way they should go in the amp.
There are only two possibilities because of the heat sink. There are two broadband ferrit transformers directly across from each other. Should the final be placed so that the base goes to one and the collector goes to the other, or should it be placed so that the two emitters go to them?
Thanks Robert

2785. Pspice

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 00:19:19 UTC
From: xenolith@halcyon.COM
Message-ID: <199409270018.AA09173@halcyon.com>
Source record: 116125

>Do any of you use pspice on a Mac? I downloaded a copy but am unable to
>get it to run. My system crashes..with a bad F-line instruction message.
>Any ideas?
>Thanks...John

It requires an FPU to run and I dont think you have one.

mail me direct if you want to talk about it!

Kevin Purcell, N7WIM / G8UDP xenolith@halcyon.com 206/649-6489
Seattle dBug Mac Developers SIG organiser

2786. Re: Where to find "micro" phone plug

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 00:40:01 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <367pl1$58j@chnews.intel.com>
Source record: 116122

In article <35veu0$3o2@news.ysu.edu>, Hank Riley <au156@yfn.ysu.edu> wrote:

>Looking for a 3/32 inch (2.5 mm) three contact (stereo)
>miniature phone plug for a Alinco HT to TNC cable.>Hank, N1LTV

DC Electronics, P.O.Box 3203, Scottsdale, AZ 85271-3203 has them.
Toll Free Orders: (800)467-7736 (800)423-0070

--
73, Cecil, KG7BK, OOTC Most of the doors in amateur radio can
(Not speaking for Intel) not be opened by a -.-. .-- key.

2787. SO-42P Mixer Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 02:32:03 UTC
From: dshalita@rogue.COM
Message-ID: <m0qpROo-000Em4C@rogue.com>
Source record: 116129

I have a TRW Swap-Meet-Special converter that uses what looks like a balun to feed input into a SO-42P IC, a Siemens Double Balanced Mixer IC, (14 pin). Trying to decide if this is a low or hi z mixer input?

I have tried thru Siemens USA, to get a data sheet for the SO-42P IC with the reply, "OBSOLETE".

Can someone provide me with the estimated input impedance to the mixer port, pins 7 and 8 and impedance of output port pins 2 and 5,3? Return-Loss and Phase data is OK too.

Really appreciate assistance with this old part and obsolete data sheet.

Thanks, Dave
w6mik

--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

2788. 300 AM transmitter for sale

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 03:54:04 UTC
From: skeeterbdg@aol.com
Message-ID: <36850s$gcu@newsbf01.news.aol.com>
Source record: 116123

If you are interested and would like more information, please email me directly.

Thanks!
Skeeter

2789. Building MFJ 8100 Gennie SW receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 06:11:05 UTC
From: keen@phakt.usc.edu
Message-ID: <368d1p$241@phakt.usc.edu>
Source record: 116136

Hi!

I am a person who is contemplating getting my Tech plus ticket as soon as an exam is given where I can get to it easily. Since I want to get into HF listening and brush up on my CW cheaply while I wait, I got a MFJ 8100 kit. It is a modernized regenerative receiver using 3 FETs and a LM386, receiving AM, SSB, and CW on all amateur HF bands.

I decided to get a regenerative kit because it can recieve more modes than a superhet can in a simple kit, and because the MFJ 8100 got good reviews.

Anyhow, before I started and risked messing up my $60 kit, I wanted to get some 'been there, done that' advice from folks who should know.

I have already built some simple kits (like a logic probe) and I know how to solder fairly well. (I've got a 15w iron with a grounded tip and a spool of 0.015 solder) I also know about polarity of components, the importance of keeping leads short, why cold solder joints are evil, and basic stuff like that.

I was wondering if anyone has any kit-building traps to look out for or any experiences that I can make use of.

Thanks!

Ben Keen

2790. Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 06:22:58 UTC
From: acooney@netcom.com
Message-ID: <acooneyCwrz2B.Ht8@netcom.com>
Source record: 116137

I've an antenna in a harsh environment, where the feedline can get s
wet at various points. The varying wetness causes shifts in VSWR that
are unpredictable, as they appear to hit 'nodes' in the feedline. I
looped the feedline many times through a ferrite torroid located right
at the feed of the dipole, and the result has been a reduction in the
effect I was seeing before -- apparently due to a reduction in signal
travelling on the outside of the coax. So is that external energy
being absorbed by the ferrite (ie., wasted power), or is the torroid
giving me a high impedance 'choke' -- effectively just closing the door
on that rf path? Oh, and the frequency is ~50MHz.

Ideas or comments? Thanks for your time. :)

Alan
WD6DES

2791. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 08:20:27 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <368kkb$a6q@proffa.cc.tut.fi>
Source record: 116138

Gary Coffman (gary@ke4zv.atl.ga.us) wrote :

> In article <366ddd$9q@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir)
> writes:
> > Hi !
> >
> > Does anybody out here have any design formulae to build narrow-band inter-
> >digital filters ?
> > Typically, I need a filter centered on about 1297 MHz with more than 90 dB
> >insertion loss at 1291 MHz. The French SHF repeater shift is - 6 MHz.

> Ouch! That's tough. To get that much rejection, your insertion loss on
> the desired receive channel is going to be really high, probably as much
> as 10 db. I doubt that will be acceptable. You should stick to standard
> cavity notch duplexers instead.

A notch duplexer is propably the best solution if you must use a common antenna for both RX and TX _and_ you have a clean site. However, if there are strong FM and/or TV transmitters on the site to worry about, you still need some band-pass filtering between the duplexer and receiver with additional insertion loss.

If you can install separate Rx and Tx antennas and move them as far as possible from each other and you can get away with much simpler filters. Due to the short wavelength, you need only 1/9 separation for the same isolation as would be required on 2 m. The other nice feature is that you can use the structures of the tower as a shield between the Rx and Tx antenna, as the diffraction around obstacles is much less than on lower frequncies. The drawback is of course that the nulls in the radiation pattern occure at different directions for Rx and Tx. We are currently using band-pass filters for 1291/1297 MHz and the antenna separation of only about 6 m but with a solid metal tube about 1 m in diameter between Rx and Rx antennas.

One more trick that we are using is that the main part of the Tx-side selectivity (to filter out the phase noise falling on the Rx frequency) is before the power amplifier and only moderate filtering is used after the power amplifier mainly to filter out harmonics generated by the power amplifier itself. It is much cheaper to loose some milliwatts in the the tx-duplexers (which can be compensated with an additional low power stage) than loose a few watts.

One other nice feature about band-pass filters on receive is that the transmitter signal is usually the only strong signal that you have to worry about, i.e. you have to attenuate it so much that it is below the 1 dB compression point of the preamp and after the

preamp you can use additional filtering without worrying too much
about insertion loss.

However, when using notch duplexers, there is allways the risk that
strong out-of-band signals generate third order (and higher order)
intermodulation products with our own Tx-signal that are stronger
than the noise level at the Rx-frequency even if all signals are
well below the 1 dB compression point of the preamp.

Lance Lascari WS2B (lascal@marcus.its.rpi.edu) wrote:

> anyway, there supposedly is a design program out there that
> was published... I think it's written in basic. I don't have it
> personally though.

I think Lance is refering to "Computer-aided Interdigital bandpass
filter design" by Jerry Hinshaw, N6JH and Shahrokh Monemzadeh
in Ham Radio Magazine, January 1985 pp. 12-26.

I haven't tried the program, thus I don't know what selectivity can be
obtained with a narrow passband. The 1296 design example was calculated
for a 20 MHz passband.

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

2792. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 09:34:33 UTC
From: elendir@enst.fr
Message-ID: <368ov9$mn0@cismsun.univ-lyon1.fr>
Source record: 116139

Kein{nen Paul (k23690@proffa.cc.tut.fi) wrote:

: A notch duplexer is propably the best solution if you must use a common
: antenna for both RX and TX _and_ you have a clean site. However, if there
: are strong FM and/or TV transmitters on the site to worry about, you still
: need some band-pass filtering between the duplexer and receiver with
: additional insertion loss.

The site is already almost covered with various antennae. In fact, it's the highest place in the immediate viciny of Paris. There are already two repeaters here, VHF and UHF. That would complete both. But there are also a whole bunch of professional repeaters.

: If you can install separate Rx and Tx antennas and move them as far as
: possible from each other and you can get away with much simpler filters.

Unfortunately, the antennae are installed atop a building, so I don't think there'll be much space...

As you suggest, I could use a notch filter to remove the Tx frequency. Let's assume an output power of 50 W, and a receiver sensitivity of 100 nV. That'd mean something like +17 dB output and -157 dB input, 160 dB of loss. Of course, I have no idea a priori about the spurious power on the Rx frequency. Could I insert another notch filter in the Tx path to remove any energy at the Rx QRG ?

: However, when using notch duplexers, there is allways the risk that
: strong out-of-band signals generate third order (and higher order)
: intermodulation products with our own Tx-signal that are stronger
: than the noise level at the Rx-frequency even if all signals are
: well below the 1 dB compression point of the preamp.

We have precisely the case here because our frequency is polluted by harmonics of a tracking system (SYLTRACK) every 15 kHz between 430 and 434 MHz, our phonie sub-band. Thus, each time we use the repeater, unless we have a very strong signal, we are covered by a horse like noise :-(

: I think Lance is refering to "Computer-aided Interdigital bandpass
: filter design" by Jerry Hinshaw, N6JH and Shahrokh Monemzadeh
: in Ham Radio Magazine, January 1985 pp. 12-26.

Thanks for your advices ! Do you know where I could possibly find the source ? It's really pretty hard to get Ham Radio Magazine over here, so imagine for old issues !!! :-(

Thanks again and 73s !

Vincent
--

F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2793. Re: duplexer for 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 11:35:26 UTC
From: randolph@est.enet.dec.com
Message-ID: <369ehl$aj0@mrnews.mro.dec.com>
Source record: 116127

In article <9409261820391867@kbsbbs.com>, tom.alldread@kbsbbs.com (Tom Alldread) writes...
>Greetings Larry:
> I can say from experience that building home brew duplexers is a
>major project that requires the tools and expertise of a good machinest
>plus the availability of expensive test equipment to properly tune up
>the duplexers once they are constructed. But it can be done

FWIW, there's an article in the April, 1979 QST on constructing a 2m duplexer from copperclad stock. It sounds easy enough, but you know how projects like this tend to expand to occupy all of your time. There's a lot of little details to take care of - for instance, the author recommends silver plating all interior surfaces, and polishing all hardware inside. Claimed isolation is 81 dB.

-Tom R. N1OOQ randolph@est.enet.dec.com

2794. Re: Need Help: measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 13:08:29 UTC
From: jeroen@dxcern.cern.ch
Message-ID: <1994Sep27.130829.14940@dxcern.cern.ch>
Source record: 116126

In article <tkreyche-260994091505@tomkreyche.zdlabs.ziff.com>,
Tom Kreyche <tkreyche@zdlabs.ziff.com> wrote:
>Dear homebrewers,
>
>I'm working on a commerical seismometer (for measuring distant earthquakes)
>and don't understand some coil phenomena.
>
>With the magnet in place around the coil and with the coil locked so it
>can't move, the coil resistance bounces slowly betwee 47.6k and 48.5k.

At what frequency does it vary?

Jeroen Belleman
jeroen@dxcern.cern.ch

2795. More on RC model Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 16:29:11 UTC
From: mack@mails.imed.COM
Message-ID: <9408277806.AA780687815@mails.imed.com>
Source record: 116130

I agree with Gary about the legalities. You should IMMEDIATELY desist if you are using 6M even if you are a licensed amateur! Given the current mood of the FCC, you could get some VERY big fines for this if caught.

Now to your technical needs. If you haven't been in model RC stuff very long, you probably are not aware of the history of the current specifications. The channels were narrowed, the modulation bandwidth was narrowed, and more channels were added. The suggestion that Gary made is a good one if you are using the 72MHz stuff. The only problem is that you will be doing this illegally, too. This is Part 15 equipment and must be type approved before use. This means you are not allowed to mess with the antenna or have external power amplifiers.

Are you also aware that in the 72 MHz region that there are 2 sets of frequencies? There is one set for cars, boats, etc. and another reserved for airplanes.

You really need to get a legitimate frequency band for this type of work. There are other ways to do this legally. I haven't read the regulations lately but you could probably build your own encoders and decoders and use a legitimate 72 MHz band transmitter to transmitt to all models simultaneously. The electronics for the encoder and the receiver would get pretty messy, and the response may slow down a bit, but it would be legal.

I will be happy to correspond with you directly on technical matters. It would seem that you REALLY need some legal help with the FCC to get some spectrum allocated for this use! One option is using an ISM (industrial, scientific, medical) band for this. The problem here is interference from other users of the band.

Again, write if I can be of further help.

Ray Mack
WD5IFS
mack@mails.imed.com

2796. Re:Measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 16:42:02 UTC
From: mack@mails.imed.COM
Message-ID: <9408277806.AA780688421@mails.imed.com>
Source record: 116128

If the magnet is REALLY strong, it would only take a very slight movement of the coil to induce current in the coil. The level of current that is flowing when making the measurement is on the order of a few microamps, so it would take very little to upset the measurement by 1%. I doubt that you are able to totally immobilize the coil. Even putting you hand down on the bench next to the coil is probably enough to get measurable current.

Ray
WD5IFS
mack@mails.imed.com

2797. Re:Need NE561 PLL chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 16:47:40 UTC
From: mack@mails.imed.COM
Message-ID: <9408277806.AA780689014@mails.imed.com>
Source record: 116131

Jeff:

I believe that Phillips has discontinued the 561. However, the 564 should be reasonably close in features unless that is the one that has all the neat AM synchronous dtection stuff in it. If that is the case you may be able to redesign your circuit around an NE602 and/or NE604 and NE564 all of which are still in production.

Ray
WD5IFS
mack@mails.imed.com

2798. Re: Toroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 17:13:07 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <369jr3$c3h@tekadm1.cse.tek.com>
Source record: 116132

acooney@netcom.com (Alan Cooney):

>I've an antenna in a harsh environment, where the feedline can get s
>wet at various points. The varying wetness causes shifts in VSWR that
>are unpredictable, as they appear to hit 'nodes' in the feedline. I
>looped the feedline many times through a ferrite torroid located right
>at the feed of the dipole, and the result has been a reduction in the
>effect I was seeing before -- apparently due to a reduction in signal
>travelling on the outside of the coax. So is that external energy
>being absorbed by the ferrite (ie., wasted power), or is the torroid
>giving me a high impedance 'choke' -- effectively just closing the door
>on that rf path? Oh, and the frequency is ~50MHz.

If the toroid is absorbing a significant amount of energy, there can be only one possible result: it will get hot.

Most of the ferrites used for this purpose have a mostly resistive impedance at the frequency of use. This means that they will dissipate power if current flows through the winding(*). The object, though, is to reduce the current to a very low value. If the winding has a sufficiently high impedance, the current will be small, and the dissipation in the core will be negligible.

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

(*) To be more specific, we're talking about the NET current through the winding. In the case of coax, this equals the current flowing on the outside.

2799. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 17:21:32 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <369kas$18j1@info2.rus.uni-stuttgart.de>
Source record: 116133

Allan,

The losses in your choke depend on the material used. I guess
that on 50 MHz most ferrites will be quite lossy.

The best solution will be to use a proper balun, as published
by the ARRL and others.

IMO the best is to build a folded dipole with a 4:1 cable balun.
or replace your dipole with a groundplane.

Hope you will have success, Moritz DL5UH

2800. Re: Specs: "RCA 400 40341" "2N6485"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 17:46:53 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-2709941346530001@k4dii.ksc.nasa.gov>
Source record: 116150

In article <366p69$m7@newsbf01.news.aol.com>, jimn0oct@aol.com (JimN0OCT) wrote:
> My meager selection of data books do not have any information on the the
> following:
> RCA 400 or 40341 (device has both of these markings)
> 2N6485 which is a tiny metal cased 6-pin device.

jim-

The RCA "400" is possibly a date code. There is an RCA 40341, "High-Power 50-MHz Emitter-Ballasted Silicon N-P-N Overlay Transistor" listed in a 1978 RCA data book. It is rated at 30 Watts minimum output at 24 Volts DC, 10 dB minimum gain, infinite load mismatch tested at 50 MHz. It is in a JEDEC TO-60 case, with leads in a standard onfiguration (E-B-C going clockwise).

ICE0(max)=1.0 Ma at Vce=30
ICB0(max)=10 Ma at Vcb=50
V(br)CE0(min)=35 at Ic=200 Ma(pulsed)
V(br)CEV(min)=70 at Vbe=-1.5, Ic=200 Ma(pulsed)
V(br)EB0(min)=4 at Ie=10 Ma
Thermal Resistance = 2.5 degrees C per Watt (typical?)

Poe(min)=30 at 24 VDC, 3 watts drive, 50 MHz
Gpe(min)=10 dB at 24 VDC, 3 watts drive, 50 MHz
Cobo(max)=85 pF

I hope this is of value. The RCA book jumped right over the 2N6485, so it is probably made by another company.

73, Fred, K4DII

2801. Re: Toroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 18:37:44 UTC
From: moy@xp.psych.nyu.edu
Message-ID: <9409271841.AA27077@xp.psych.nyu.edu>
Source record: 116134

: royle@tekgp4.cse.tek.com (Roy W Lewallen) said,

]acooney@netcom.com (Alan Cooney):
]
]>I've an antenna in a harsh environment, where the feedline can get s
]>wet at various points. The varying wetness causes shifts in VSWR that
]>are unpredictable, as they appear to hit 'nodes' in the feedline. I
]>looped the feedline many times through a ferrite torroid located right
]>at the feed of the dipole, and the result has been a reduction in the
]>effect I was seeing before -- apparently due to a reduction in signal
]>travelling on the outside of the coax. So is that external energy
]>being absorbed by the ferrite (ie., wasted power), or is the torroid
]>giving me a high impedance 'choke' -- effectively just closing the door
]>on that rf path? Oh, and the frequency is ~50MHz.
]
]If the toroid is absorbing a significant amount of energy, there can be
]only one possible result: it will get hot.
]
]Most of the ferrites used for this purpose have a mostly resistive
]impedance at the frequency of use. This means that they will dissipate
]power if current flows through the winding(*). The object, though, is to
]reduce the current to a very low value. If the winding has a sufficiently
]high impedance, the current will be small, and the dissipation in the
]core will be negligible.
]
]73,
]Roy Lewallen, W7EL
]roy.lewallen@tek.com
]
]
](*) To be more specific, we're talking about the NET current through the
]winding. In the case of coax, this equals the current flowing on the
]outside.

I think this is a misdiagnosis and that a toroid "choke" is not the
right fix. If you're getting standing waves apparent along the
outside of the coax, you've got some *serious* mismatch going on to
begin with. Check the *end* insulators, which must provide high
isolation despite moisture. Re-check the antenna's tuning (remember
grid-dip meters?) for the frequency you're using and feed your dipole
through a balun. While you're at it, see that any guy lines are
broken up with insulators to prevent resonances and that the antenna
is sufficiently far (say, a few wavelengths) from conductive
structures.

OTOH, if your coax is wicking water *inside* along the braid, that can cause some interesting effects as well.

Moy Wong (moy@xp.psych.nyu.edu) Dept. of Psychology, New York University

2802. Re: Can combine two 50MHz Tx signals?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 19:23:09 UTC
From: fred-mckenzie@ksc.nasa.gov
Message-ID: <fred-mckenzie-2709941523090001@k4dii.ksc.nasa.gov>
Source record: 116149

In article <acooneyCwpqqn.2J3@netcom.com>, acooney@netcom.com (Alan Cooney) wrote:
> I'm looking for your suggestions on combining two or more six meter
> signals.
> What the heck is this for, you ask? I work for a company that builds
> remotely controlled models for the movie industry.

Alan-

Since you appear to be in the U.S., I assume your "six meter" signals are actually in the 49 MHz range, covered by FCC part 15 rules. Regardless, what you want to accomplish may be better done on other frequencies with less chance of interference from other users.

One approach might be to use multiplex, much like is done with multi-channel microwave links. Signals from the different controllers can each modulate a sub carrier. The sum of all the sub carriers can then FM modulate a main carrier, which is amplified (using class C amplifiers) and transmitted. Circuitry similar to Broadcast FM Stereo decoders, might be used at the receivers to decode the correct subcarrier. (Look for "SCA" decoders.)

Another approach might be to use spread spectrum techniques, using hardware that is appearing on the market for unlicensed wireless LAN applications, et cetera. I understand there is equipment coming out for the 900 MHz band, as well as somewhere up in the 2 GHz range. An advantage of spread spectrum, is the ability to co-exist with other users, assuming no one user has so strong a signal as to overload the other user's receivers.

73, Fred, K4DII

2803. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-27 20:41:07 UTC
From: ted1@rsvl.unisys.com
Message-ID: <ted1.44.2450714E@rsvl.unisys.com>
Source record: 116135

In article <368ov9$mn0@cismsun.univ-lyon1.fr> elendir@enst.fr (Elendir) writes:

> We have precisely the case here because our frequency is polluted by harmonics
>of a tracking system (SYLTRACK) every 15 kHz between 430 and 434 MHz, our phonie
>sub-band.

What are these phonie sub bands? Is this a fictitious band?

Desole Vincent, je sais que l'anglais n'est pas ta langue maternel mais j'ai
bien aime la blague.

> Thanks again and 73s !

> Vincent

Edward Stafford AA0QG <ted1@rsvl.unisys.com>
UNISYS Corp.
MS 4963
P.O. Box 64942 Phone: [612] 635-7725
St. Paul, MN 55164-0942 FAX: [612] 635-7523

2804. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 03:08:02 UTC
From: micron3@aol.com
Message-ID: <36ammi$8t8@newsbf01.news.aol.com>
Source record: 116142

In article <acooneyCwrz2B.Ht8@netcom.com>, acooney@netcom.com (Alan Cooney) writes:

>So is that external energy
>being absorbed by the ferrite (ie., wasted power), or is the torroid
>giving me a high impedance 'choke' -- effectively just closing the door
>on that rf path? Oh, and the frequency is ~50MHz.

The energy is not being lost. You are correct in the assumption that the

choke is "Closing the door on that rf path."

It is my understanding that wrapping the coax around the torroid core is not very effective as so little of the cable is in contact with the core.
You might want to try installing a "Current Balun" which consists of many torroids just big enough to pass over the cable. I beleive that Amidon amoung
others will sell you the parts or finished units. Since you are operating at
50 MHz a typical HF balun won't work. You will need to specify that you need a balun that will work at 50 MHz. Hope this helps.

Terry KJ7F

2805. Re: More on RC model Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 05:19:00 UTC
From: emd@ham.island.net
Message-ID: <092794211950Rnf0.79b4@ham.island.net>
Source record: 116140

mack@mails.imed.COM writes:

> I agree with Gary about the legalities. You should IMMEDIATELY desist
> if you are using 6M even if you are a licensed amateur! Given the
> current mood of the FCC, you could get some VERY big fines for this if
> caught.
>
> Now to your technical needs. If you haven't been in model RC stuff
> very long, you probably are not aware of the history of the current
> specifications. The channels were narrowed, the modulation bandwidth
> was narrowed, and more channels were added. The suggestion that Gary
> made is a good one if you are using the 72MHz stuff. The only problem
> is that you will be doing this illegally, too. This is Part 15
> equipment and must be type approved before use. This means you are
> not allowed to mess with the antenna or have external power
> amplifiers.
>

I haven't seen the earlier parts of this thread, but there are channels set aside for RC work ON six metres. From 50.8 to 50.98, every 20 KHz is a channel for RC. Granted, you need to be an amateur to use this, but why would the FCC frown on this?

--
emd@ham.island.net (Robert Smits VE7EMD Ladysmith BC)

2806. Re: Please Recommend An Intro. Radio Book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 05:36:01 UTC
From: robinsonhb@aol.com
Message-ID: <36avc1$bc8@newsbf01.news.aol.com>
Source record: 116151

In article <35t36r$hji@usenet.rpi.edu>, lascal@marcus.its.rpi.edu (Lance Lascari WS2B) writes:

There are several books by Joe Carr that I would recommend.
"Secrets of RF Circuit Design", and "Mastering Radio Frequency Circuits"

both have projects.

Also see "Radio Receiver Projects You Can Build" by Homer L. Davidson

All are from TAB Books.

Also see 73 Amateur Radio magazine; they have a lot of good projects.

73 N3GDE

2807. Interdigital Filter Design Program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 06:21:45 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <14161@uugate.wa7slg.ampr.org>
Source record: 116153

The following is a program for the design of interdigital filters, written for GWBASIC.

Don't complain about the length!

*** Begin listing ***

```
10 REM ***
20 REM interdigital design pgm
30 REM ***
40 DEF FNRJ(TA,B,C,D) = (B*C-TA*D)/(C*C+D*D)
50 REM USING EQUAL DIMATER RODS
60 REM G VALUES BASED ON RIPPLE BW . Q/COUP ON 3-BD
70 DIM G(200), C(200), RK(200), AK(200), FR(40), ALOSS(40)
80 DIM A(200), B(200)
90 PI = 3.14159265#
100 INPUT "# OF ELEMENTS, P-P RIPPLE IN PASSBAND (DB)";N,RIP
110 REM
120 INPUT"INPUT FILTER CENTER FREQ.(GHZ), BW(MHZ)&LOAD IMPEDANCE ZO";FZGC, BWMC,R
130 REM
140 PRINT"INPUT GROUP PLANE SPACE, ROD DIAMATER"
150 INPUT"& DISTANCE TO CENTER OF FIRST AND LAST ROD";H,D,E
160 REM
170 REM
180 INPUT"NO. OF FREQU. REJECTION PTS AND STEP SIZE (mhz)"; NFR, STP
190 FOR IP = -NFR/2 TO NFR/2
200 CONTER = CONTER + 1
210 FR(CONTER) = FZGC+(STP*.001*IP)
220 NEXT IP
230 IDAT = 1
240 GOTO 250
250 F1 = FZGC-.0005*BWMC
260 F2 = FZGC+.0005*BWMC
270 IF RIP > 0 THEN GOTO 330
280 BW3GC=F2-F1
290 BWRGC = 0
300 BW3 = 1
310 GOSUB 1960
320 GOTO 390
330 B = 1/SQR(10^(.1*RIP)-1)
340 CA = LOG(B+SQR(B*B-1))/(N)
350 BW3=(EXP(CA)+EXP(-CA))/2
360 GOSUB 1740
370 BWRGC = F2-F1
380 BW3GC=BWRGC*BW3
```

```
390 REM
400 W = 2 * (F2-F1)/(F2+F1)
410 QF=FZGC/BW3GC
420 NFM=N-1
430 QWVL = 11.8028/(4*FZGC)
440 FOR K = 1 TO NFM
450 AK(K) = 1/(BW3*SQR(G(K)*G(K+1)))
460 RK(K)=AK(K)/QF
470 NEXT K
480 AKO = G(1)*BW3
490 AK(N)=AKO
500 AK(N+1)=0
510 QS=G(1)*BW3*QF
520 CANH=(EXP(2*PI*E/H)-1)/(EXP(2*PI*E/H)+1)
530 ZM=59.95858*LOG(4*H/(PI*D))
540 ZE = 59.9585*LOG(CANH*H*4/(PI*D))
550 RKM=RK(1)*SQR(ZM/ZE)
560 Z=PI*D/(2*H)
570 COTH=(EXP(Z)+1)/(EXP(Z)-1)
580 Y=PI*RKM/4
590 T=COTH^Y
600 C(1)=(H/PI)*LOG((T+1)/(T-1))
610 MFL=N-2
620 REM IF N-3<0 THEN AG = 1 ELSE IF N=3=0 THEN AG = 2 ELSE AG =3
630 ON (2+SGN(N)*1) GOTO 690, 690, 640
640 FOR K = 2 TO MFL
650 Y = PI * RK(K)/4
660 T = COTH^Y
670 C(K) = (H/PI)*LOG((T+1)/(T-1))
680 NEXT K
690 C(N-1)=C(1)
700 X=SQR(PI*R/(4*ZE*QS))
710 AQ=2*QWVL*ATN(X/SQR(1-X*X))/PI
720 QU=2200*H*SQR(FZGC)
730 SUMG = 0
740 FOR J1 = 1 TO N
750 SUMG=SUMG+G(J1)
760 NEXT J1
770 BLOSS=4.34*FZGC*SUMG/(QU*(F2-F1))
780 DELAY = SUMG/(2*PI*(F2-F1))
790 IF RIP > 0 THEN GOTO 820
800 PRINT"DESIGN DATA FOR ";N;" POLE INTERDIGITAL FILTER. BUTTERWORTH RESPONSE"
810 GOTO 830
820 PRINT "DESIGN DATA FOR";N;" POLE INTERDIGITAL FILTER .BAND PASS RIPPLE";RIP;"DB"
830 PRINT"CENTER FREQ. ";FZGC ;"GHZ"
840 PRINT"CUTOFF FREQ. ";F1;" (ghz) AND ";F2;" GHZ"
850 PRINT"RIPPLE BW. ";BWRGC;"GHZ"
860 PRINT "3 DB BW. ";BW3GC;"ghz"
870 PRINT"FRACTIONAL BW.";W
880 PRINT"FILTER Q ";QF
```

```
890 PRINT"EST QU ";QU
900 PRINT"LOSS BASED ON THIS QU ";BLOSS;" DB"
910 PRINT "DELAY AT BAND CENTER ";DELAY; "NANOSECONDS"
914 PRINT "press any key"
915 IF INKEY$="" THEN 915
920 FOR JK = 1 TO NFR
930 IF JK = 1 THEN PRINT "FREQUENCY REJECTION INFORMATION "
940 NFN=ABS(2*(FR(JK)-FZGC)/(W*FZGC))
950 IF RIP >0 THEN GOTO 980
960 ALOSS(JK) = 10*LOG(1+NFN^(2*N))/LOG(10)
970 GOTO 1020
980 IF NFN<1 THEN NFN=1
990 ANG = N*LOG(NFN+SQR(NFN*NFN-1))
1000 YAK = .5*(EXP(ANG)+EXP(-ANG))
1010 ALOSS(JK) = 10 * LOG(1+(10^(.1*RIP)-1)*YAK*YAK)/LOG(10)
1020 IF ALOSS(JK)>65 THEN ALOSS = 65 ELSE ALOSS = ALOSS(JK)
1030 FR=INT(FR(JK)*10000)/10000:ALOS=INT(ALOSS(JK))
1040 PRINT TAB(INT(ALOSS))"*";TAB(66)FR;TAB(73)ALOS
1050 NEXT JK
1060 WO=2*PI*FZGC*1E+09
1070 F=D/H
1080 CF=(-.0000422+.0857397*F+.0067853*F*F-9.092165E-02*F^3+.169088*F^4)*PI*H*2.54
1090 REM
1100 WW = WO*1E-12
1110 B2=PI*AQ/(2*QWVL)
1120 GG=1/R
1130 BB=-COS(BS)/(ZE*SIN(B2))
1140 EL1=.8*QWVL
1150 ANG=EL1*PI/(2*QWVL)
1160 B1=ANG-B2
1170 YL=-COS(ANG)/(ZM*SIN(ANG))
1180 CP=WW*(CF+.17655*D*D/(QWVL-EL1))
1190 Y1=CP+YL
1200 EL2=.87*QWVL
1210 ANG=EL2*PI/(2*QWVL)
1220 B4=ANG-B2
1230 YL=-COS(ANG)/(ZM*SIN(ANG))
1240 CD = WW*(CF+.17655*D*D/(QWVL-EL2))
1250 Y2=CD+YL
1260 EL3=.95*QWVL
1270 ANG=EL3*PI/(2*QWVL)
1280 B5=ANG-B2
1290 YL=-COS(ANG)/(ZM*SIN(ANG))
1300 CQ=WW*(CF+.17655*D*D/(QWVL-EL2))
1310 Y3=CQ+YL
1320
ELEM=Y3*Y2*EL1/((Y1-Y2)*(Y1-Y3))+Y1*Y3*EL2/((Y2-Y1)*(Y2-Y3))+Y1*Y2*EL3/((Y3-Y1)*(Y3-Y2))
1330 TANN=SIN(B1)/COS(B1)
1340 YL=FNRJ(GG,BB+TANN/ZE,1-ZE*BB*TANN,ZE*GG*TANN)
1350 Y1=CP+YL
```

```
1360 TANN=SIN(B4)/COS(B4)
1370 YL=FNRJ(GG,BB+TANN/ZE,1-ZE*BB*TANN,ZE*GG*TANN)
1380 Y2=CD+YL
1390 TANN=SIN(B5)/COS(B5)
1400 YL=FNRJ(GG,BB+TANN/ZE,1-ZE*BB*TANN,ZE*GG*TANN)
1410 Y3=CQ+YL
1420
ELEQ=Y3*Y2*EL1/((Y1-Y2)*(Y1-Y3))+Y1*Y3*EL2/((Y2-Y1)*(Y2-Y3))+Y1*Y2*EL3/((Y3-Y1)*(Y3-Y2))
1430 REM
1435 PRINT"press any key"
1436 IF INKEY$="" THEN 1436
1440 PRINT"QUARTER WAVELENTGH =";QWVL ;"INCHES"
1450 PRINT"THE LENGTH OF INTERIOR ELEMENTS =";ELEM;" INCHES"
1460 PRINT"LENGTH OF END ELEMNTS .";ELEQ;" INCHES"
1470 PRINT"GROUND-PLANE SPACE =";H;" INCHES
1480 PRINT"ROD DIAMTER =";D;" INCHES"
1490 PRINT "END PLATES";E;" INCHES FROM C/L OF END ROD "
1500 PRINT"TAP EXTERNAL LINES UP ";AQ;" INCHES FROM SHORTED END "
1510 PRINT"LINE IMPEDANCES: END ROD";ZE;" , OTHER ";ZM;" , EXT. LINES ";R;"OHM"
1515 PRINT"press any key"
1516 IF INKEY$="" THEN GOTO 1516
1520 PRINT"DIMENSIONS"
1530 PRINT"EL. NO END TO C C TO C G(K) Q/COUP"
1540 DOM=E
1550 GOO = 1
1560 PRINT"O";TAB(41)GOO;TAB(55)AKO
1570 PRINT"1";TAB(16)E;TAB(41)G(1);TAB(55)AK(1)
1580 FOR K=1 TO NFM
1590 L=K+1
1600 PRINT TAB(28)C(K)
1610 DOM=DOM+C(K)
1620 PRINT L;TAB(16)DOM;TAB(41)G(L);TAB(55)AK(L)
1630 NEXT K
1640 LQ=N+1
1650 PRINT LQ;TAB(41)C(LQ)
1660 DOM = DOM+E
1670 PRINT TAB(16)DOM
1680 IF IDAT=1 THEN GOTO 2070
1690 REM
1700 REM
1710 REM DEFINE FUNCTION
1720 DEF FNRJ(TA,B,C,D)=(B*C-TA*D)/(C*C+D*D)
1730 END
1740 REM SUB CHEB
1750 REM
1760 C=2*RIP/17.37
1770 BETA=LOG((EXP(C)+1)/(EXP(C)-1))
1780 GAMMA=.5*(EXP(BETA/(2*N))-EXP(-BETA/(2*N)))
1790 FOR K=1 TO N
1800 A(K)=SIN(.5*(2*K-1)*PI/N)
```

```
1810 B(K)=GAMMA^2+SIN(K*PI/N)^2
1820 NEXT K
1830 G(1)=2*A(1)/GAMMA
1840 FOR K=2 TO N
1850 G(K)=4*A(K-1)*A(K)/(B(K-1)*G(K-1))
1860 NEXT K
1870 NN = N/2
1880 NNN=(N+1)/2
1890 REM IF NNN - NN<0D THEN AG1=1 ELSE IF NNN-NN=0 THEN AG1=2 ELSE AG1=3
1900 ON(2+SGN(NNN-NN)*1) GOTO 1910,1910,1930
1910 G(N+1)=((EXP(BETA/2)+1)/(EXP(BETA/2)-1))^2
1920 RETURN
1930 G(N+1)=1
1940 RETURN
1950 END
1960 REM SUB BOR BUTT
1970 REM
1980 REM
1990 REM
2000 REM
2010 POV2=1.57079633#
2020 FOR K=1 TO N
2030 G(K)=2*SIN(POV2*(2*K-1)/N)
2040 NEXT K
2050 G(N+1)=1
2060 RETURN
2070 END
```

*** END OF LISTING ***

This came from Ham Radio magazine a few years ago...

I appologize for not being able to credit the appropriate parties, but I loaded my copy of the magazine to someone... for this program, in fact...

<Clint>

ka7oei@uugate.wa7slg.ampr.org

2808. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 06:52:00 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <349852431wnr@ifwtech.demon.co.uk>
Source record: 116141

Here is a version of the program you want. I do not know if the algorithms are valid for the very narrow bandwidths you
need - your milage may vary HI.

```
10 KEY OFF: CLS
20 COLOR 3, 0: LOCATE 2, 16: PRINT "DESIGN DATA FOR INTERDIGITAL BANDPASS FILTERS": COLOR
7, 0: PRINT
21 PRINT " Rook & Taylor (1970); Hinshaw N6JH & Monemzadeh (Ham Radio, Jan 1985)"
22 PRINT " I/O revision by G3SEK 1989-91"
23 ' Uses equal diameter rods
24 ' G values based on ripple BW. Q/coup on BW @3dB
30 DEF FNRJ (TA, B, C, D) = (B * C - TA * D) / (C * C + D * D)
40 DIM A(200), B(200), C(200), G(200), RK(200), AK(200), FR(100), ALOSS(100)
50 PI = 4 * ATN(1): NFR = 20: N = 3: RIP = 0!: FZGC = 1!: BWMC = 50!: FIRST = -1: ENTER$ =
CHR$(17) + CHR$(217)
52 LOCATE 8, 1
54 PRINT " Press M for millimetres, or I for inches > ";
56 T$ = INPUT$(1)
58 IF T$ = "M" OR T$ = "m" THEN UNIT$ = "mm": CV = 25.4: ELSE IF T$ = "I" OR T$ = "i" THEN
UNIT$ = "in": CV = 1 ELSE GOTO
54
60 PRINT UNIT$
70 LOCATE 10, 1: PRINT SPACE$(75): LOCATE 10, 1
72 IF FIRST THEN PRINT " Groundplane spacing, top-bottom ("; UNIT$; : INPUT ") : ", H ELSE
GOTO 76
74 IF H <= 0 THEN BEEP: GOTO 70 ELSE H = H / CV
76 IF NOT FIRST THEN PRINT USING " Groundplane spacing, top-bottom (&) = ##.##"; UNIT$; H *
CV
80 LOCATE 11, 1: PRINT SPACE$(75): LOCATE 11, 1
82 IF FIRST THEN PRINT " Rod diameter ("; UNIT$; : INPUT ") : ", D ELSE GOTO 88
84 IF D <= 0 THEN BEEP: GOTO 80
86 IF D > (.9 * H * CV) THEN BEEP: GOTO 80 ELSE D = D / CV
88 IF NOT FIRST THEN PRINT USING " Rod diameter (&) = ##.##"; UNIT$; D * CV
90 LOCATE 25, 10: COLOR 3, 0: PRINT "Press " + ENTER$ + " for default values shown in
[square brackets]"; : COLOR 7, 0
100 LOCATE 12, 1
110 PRINT USING "Overhang from centre of first _& last rod [##.##&] :"; .7 * H * CV; UNIT$;
120 INPUT " ", E: IF E = 0 THEN E = .7 * H ELSE E = E / CV
130 PRINT USING " Number of elements (7 or less) [##] :"; N;
135 INPUT " ", T: IF T <> 0 AND T < 8 THEN N = T
140 PRINT USING " Passband ripple (dB, 0=Butterworth) [#.##] :"; RIP;
145 INPUT " ", T$: IF T$ = "0" THEN RIP = 0 ELSE T = VAL(T$): IF T <> 0 THEN RIP = T
150 PRINT USING " Centre frequency (GHz) [##.####] :"; FZGC;
155 INPUT " ", T: OLDFZGC = FZGC: IF T <> 0 THEN FZGC = T
```

```
159 IF (FIRST OR OLDFZGC <> FZGC) THEN BWMC = 50 * FZGC' Default bw = 5%
160 PRINT USING " Bandwidth (MHz) [###.#] :"; BWMC;
165 INPUT " ", T: IF T <> 0 THEN BWMC = T
170 INPUT " Input/output impedance [50] : ", R
175 IF R = 0 THEN R = 50
180 PRINT
182 PRINT "Number of plotting points required at each side of centre, and freq step -"
184 PRINT USING " Points [##] :"; NFR / 2;
186 INPUT " ", T: IF T <> 0 THEN NFR = 2 * INT(T)
190 IF NFR > 50 THEN NFR = 50
192 STP = .5 * BWMC
194 PRINT USING "Step (MHz) [###] :"; STP;
196 INPUT " ", T: IF T <> 0 THEN STP = T
198 '
200 COUNT = 0
210 FOR IP = -NFR / 2 TO NFR / 2
220 COUNT = COUNT + 1
230 FR(COUNT) = FZGC + (STP * .001 * IP)
240 NEXT IP
250 F1 = FZGC - .0005 * BWMC
260 F2 = FZGC + .0005 * BWMC
270 IF RIP > 0 THEN GOTO 330
280 BW3GC = F2 - F1
290 BWRGC = 0
300 BW3 = 1
310 GOSUB 2000 ' Butterworth response
320 GOTO 390
330 B = 1 / SQR(10 ^ (.1 * RIP) - 1)
340 CA = LOG(B + SQR(B * B - 1)) / (N)
350 BW3 = (EXP(CA) + EXP(-CA)) / 2
360 GOSUB 1700 ' Chebyshev response
370 BWRGC = F2 - F1
380 BW3GC = BWRGC * BW3
390 '
400 W = 2 * (F2 - F1) / (F2 + F1)
410 QF = FZGC / BW3GC
420 NFM = N - 1
430 QWVL = 11.8028 / (4 * FZGC)
440 FOR K = 1 TO NFM
450 AK(K) = 1 / (BW3 * SQR(G(K) * G(K + 1)))
460 RK(K) = AK(K) / QF
470 NEXT K
480 AKO = G(1) * BW3
490 AK(N) = AKO
500 AK(N + 1) = 0
510 QS = G(1) * BW3 * QF
520 CANH = (EXP(2 * PI * E / H) - 1) / (EXP(2 * PI * E / H) + 1)
530 ZM = 59.9585 * LOG(4 * H / (PI * D))
540 ZE = 59.9585 * LOG(CANH * H * 4 / (PI * D))
550 RKM = RK(1) * SQR(ZM / ZE)
```

```
560 Z = PI * D / (2 * H)
570 COTH = (EXP(Z) + 1) / (EXP(Z) - 1)
580 Y = PI * RKM / 4
590 T = COTH ^ Y
600 C(1) = (H / PI) * LOG((T + 1) / (T - 1))
610 MFL = N - 2
620 ' IF N-3<0 THEN AG=1 ELSE IF N-3=0 THEN AG=2 ELSE AG=3
630 ON (2 + SGN(N) * 1) GOTO 690, 690, 640
640 FOR K = 2 TO MFL
650 Y = PI * RK(K) / 4
660 T = COTH ^ Y
670 C(K) = (H / PI) * LOG((T + 1) / (T - 1))
680 NEXT K
690 C(N - 1) = C(1)
700 X = SQR(PI * R / (4 * ZE * QS))
710 AQ = 2 * QWVL * ATN(X / SQR(1 - X * X)) / PI
720 QU = 2200 * H * SQR(FZGC)
730 SUMG = 0
740 FOR J1 = 1 TO N
750 SUMG = SUMG + G(J1)
760 NEXT J1
770 BLOSS = 4.34 * FZGC * SUMG / (QU * (F2 - F1))
780 DELA = SUMG / (2 * PI * (F2 - F1))
790 CLS : COLOR 3, 0: PRINT "DESIGN DATA FOR "; N; " POLE INTERDIGITAL FILTER": COLOR 7, 0
800 IF RIP > 0 THEN PRINT "Passband ripple "; RIP; " dB" ELSE PRINT "Butterworth response"
830 PRINT USING "Centre freq. ##.#### GHz"; FZGC
840 PRINT USING "Cutoff freqs ##.#### and ##.#### GHz"; F1; F2
850 PRINT USING "Ripple bandwidth #.##### GHz"; BWRGC
860 PRINT USING " 3dB bandwidth #.##### GHz"; BW3GC
870 PRINT USING "Fractional bandwidth #.####"; W
875 PRINT
880 PRINT USING "Filter Q ####"; QF
885 PRINT USING "Estimated Qu ####"; QU
890 PRINT USING "Loss based on this Qu ##.# dB"; BLOSS
895 PRINT USING "Delay at band centre ###.# ns"; DELA
900 LOCATE 25, 35: COLOR 3, 0: PRINT "Press " + ENTER$; : T$ = INPUT$(1): CLS
920 PRINT "FREQUENCY REJECTION INFORMATION"; TAB(67); "GHz"; TAB(74); "dB": COLOR 7, 0:
PRINT
930 FOR JK = 1 TO NFR + 1
940 NFN = ABS(2 * (FR(JK) - FZGC) / (W * FZGC))
950 IF RIP > 0 THEN GOTO 980
960 ALOSS(JK) = 10 * LOG(1 + NFN ^ (2 * N)) / LOG(10)
970 GOTO 1020
980 IF NFN < 1 THEN NFN = 1
990 ANG = N * LOG(NFN + SQR(NFN * NFN - 1))
1000 YAK = .5 * (EXP(ANG) + EXP(-ANG))
1010 ALOSS(JK) = 10 * LOG(1 + (10 ^ (.1 * RIP) - 1) * YAK * YAK) / LOG(10)
1020 ALOSS = ALOSS(JK)
1030 FR = INT(FR(JK) * 10000) / 10000
1040 COLOR 14, 0: IF ALOSS < 64 THEN PRINT TAB(INT(ALOSS) + 1); "*"; ELSE PRINT TAB(64);
```

```
">";
1045 COLOR 7, 0: IF ALOSS > 99.99 THEN ALOSS = 99.99
1050 PRINT TAB(66); : PRINT USING "#.### ##.##"; FR; ALOSS
1055 NEXT JK
1060 WO = 2 * PI * FZGC * 1E+09
1070 F = D / H
1080 CF = (-.0000422 + .0857397 * F + .0067853 * F * F - 9.092165E-02 * F ^ 3 + .169088 * F
^ 4) * PI * H * 2.54
1090 '
1100 WW = WO * 1E-12
1110 B2 = PI * AQ / (2 * QWVL)
1120 GG = 1 / R
1130 BB = -COS(B2) / (ZE * SIN(B2))
1140 EL1 = .8 * QWVL
1150 ANG = EL1 * PI / (2 * QWVL)
1160 B1 = ANG - B2
1170 YL = -COS(ANG) / (ZM * SIN(ANG))
1180 CP = WW * (CF + .17655 * D * D / (QWVL - EL1))
1190 Y1 = CP + YL
1200 EL2 = .87 * QWVL
1210 ANG = EL2 * PI / (2 * QWVL)
1220 B4 = ANG - B2
1230 YL = -COS(ANG) / (ZM * SIN(ANG))
1240 CD = WW * (CF + .17655 * D * D / (QWVL - EL2))
1250 Y2 = CD + YL
1260 EL3 = .95 * QWVL
1270 ANG = EL3 * PI / (2 * QWVL)
1280 B5 = ANG - B2
1290 YL = -COS(ANG) / (ZM * SIN(ANG))
1300 CQ = WW * (CF + .17655 * D * D / (QWVL - EL3))
1310 Y3 = CQ + YL
1320 ELEM = Y3 * Y2 * EL1 / ((Y1 - Y2) * (Y1 - Y3)) + Y1 * Y3 * EL2 / ((Y2 - Y1) * (Y2 -
Y3)) + Y1 * Y2 * EL3 / ((Y3 - Y1) *
(Y3 - Y2))
1330 TANN = SIN(B1) / COS(B1)
1340 YL = FNRJ(GG, BB + TANN / ZE, 1 - ZE * BB * TANN, ZE * GG * TANN)
1350 Y1 = CP + YL
1360 TANN = SIN(B4) / COS(B4)
1370 YL = FNRJ(GG, BB + TANN / ZE, 1 - ZE * BB * TANN, ZE * GG * TANN)
1380 Y2 = CD + YL
1390 TANN = SIN(B5) / COS(B5)
1400 YL = FNRJ(GG, BB + TANN / ZE, 1 - ZE * BB * TANN, ZE * GG * TANN)
1410 Y3 = CQ + YL
1420 ELEQ = Y3 * Y2 * EL1 / ((Y1 - Y2) * (Y1 - Y3)) + Y1 * Y3 * EL2 / ((Y2 - Y1) * (Y2 -
Y3)) + Y1 * Y2 * EL3 / ((Y3 - Y1) *
(Y3 - Y2))
1430 COLOR 3, 0: LOCATE 25, 25: PRINT "Press R to revise, " + ENTER$ + " to continue";
1435 T$ = INPUT$(1): CLS : COLOR 7, 0: IF T$ = "r" OR T$ = "R" THEN FIRST = 0: GOTO 70
1440 PRINT USING "Width (= quarter_-wavelength) ###.##&"; QWVL * CV; UNIT$
1450 PRINT USING "Height ##.##&"; H * CV; UNIT$
1460 PRINT USING "Rod diameter ##.##&"; D * CV; UNIT$
```

```
1470 PRINT USING "External ### lines connect at ##.##& from ground end"; R; AQ * CV; UNIT$
1475 PRINT "End covers are required unless overhang is larger than default value"
1480 IF N > 5 THEN COLOR 3, 0: LOCATE 25, 30: PRINT "Press " + ENTER$ + " for sketch"; : T$
= INPUT$(1): CLS : COLOR 7, 0
1490 IF N > 5 THEN STARTLIN = 4 ELSE STARTLIN = 8
1500 LOCATE STARTLIN, 1: COLOR 3, 0
1510 PRINT " Ele # Length Centre-to-centre Cumulative";
1515 COLOR 7, 0
1520 F1$ = " (edge) ###.##" + UNIT$
1530 F2$ = " ###.##" + UNIT$
1540 F3$ = " # ###.##" + UNIT$ + " ###.##" + UNIT$
1550 CUMU = 0: LOCATE CSRLIN + 2, 1: PRINT USING F1$; CUMU * CV;
1560 LOCATE CSRLIN + 1, 1: PRINT USING F2$; E * CV;
1570 ELE = 1: CUMU = E
1575 LOCATE CSRLIN + 1, 1: PRINT USING F3$; ELE; ELEQ * CV; CUMU * CV;
1580 FOR ELE = 2 TO N - 1
1585 LOCATE CSRLIN + 1, 1: PRINT USING F2$; C(ELE - 1) * CV;
1590 CUMU = CUMU + C(ELE - 1)
1595 LOCATE CSRLIN + 1, 1: PRINT USING F3$; ELE; ELEM * CV; CUMU * CV;
1600 NEXT
1605 LOCATE CSRLIN + 1, 1: PRINT USING F2$; C(N - 1) * CV;
1610 CUMU = CUMU + C(N - 1)
1615 LOCATE CSRLIN + 1, 1: PRINT USING F3$; N; ELEQ * CV; CUMU * CV;
1620 CUMU = CUMU + E
1625 LOCATE CSRLIN + 1, 1: PRINT USING F2$; E * CV;
1630 LOCATE CSRLIN + 1, 1: PRINT USING F1$; CUMU * CV;
1670 LOCATE STARTLIN + 2, 1: COL = 30: GOSUB 3000 ' Draw the filter
1675 COLOR 3, 0: LOCATE 25, 13: PRINT "Press Shift-PrtSc to print, Q to quit, R or " +
ENTER$ + " to revise";
1680 T$ = INPUT$(1): COLOR 7, 0: CLS : IF T$ = "q" OR T$ = "Q" THEN END ELSE FIRST = 0:
GOTO 70
1689 '
1690 ' Subroutine for Chebyshev response
1700 C = 2 * RIP / 17.37
1710 BETA = LOG((EXP(C) + 1) / (EXP(C) - 1))
1720 GAMMA = .5 * (EXP(BETA / (2 * N)) - EXP(-BETA / (2 * N)))
1730 FOR K = 1 TO N
1740 A(K) = SIN(.5 * (2 * K - 1) * PI / N)
1750 B(K) = GAMMA ^ 2 + SIN(K * PI / N) ^ 2
1760 NEXT K
1770 G(1) = 2 * A(1) / GAMMA
1780 FOR K = 2 TO N
1790 G(K) = 4 * A(K - 1) * A(K) / (B(K - 1) * G(K - 1))
1800 NEXT K
1810 NN = N / 2
1820 NNN = (N + 1) / 2
1830 ' IF NNN-NN<0 THEN AG1=1 ELSE IF NNN-NN=0 THEN AG1=2
ELSE AG1=3
1900 ON (2 + SGN(NNN - NN) * 1) GOTO 1910, 1910, 1930
1910 G(N + 1) = ((EXP(BETA / 2) + 1) / (EXP(BETA / 2) - 1)) ^ 2
```

```
1920 RETURN
1930 G(N + 1) = 1
1940 RETURN
1950 '
1990 ' Subroutine for Butterworth response
2000 POV2 = PI / 2
2010 FOR K = 1 TO N
2020 G(K) = 2 * SIN(POV2 * (2 * K - 1) / N)
2030 NEXT K
2040 G(N + 1) = 1
2050 RETURN
2950 '
2990 ' Subroutine to draw an N-pole filter starting at CSRLIN,COL
3000 TOPEND$ = CHR$(218) + CHR$(196) + " " + CHR$(179) + " " + STRING$(10, CHR$(196)) +
CHR$(191)
3010 TOPGAP$ = CHR$(179) + " " + CHR$(179) + SPACE$(11) + CHR$(179)
3020 MIDGAP$ = CHR$(179) + SPACE$(14) + CHR$(179)
3030 LROD$ = CHR$(222) + STRING$(13, CHR$(219)) + " " + CHR$(179)
3040 RROD$ = CHR$(179) + " " + STRING$(13, CHR$(219)) + CHR$(221)
3050 EVNBGAP$ = TOPGAP$
3060 ODDBGAP$ = CHR$(179) + SPACE$(11) + CHR$(179) + " " + CHR$(179)
3070 EVNBEND$ = CHR$(192) + CHR$(196) + " " + CHR$(179) + " " + STRING$(10, CHR$(196)) +
CHR$(217)
3080 ODDBEND$ = CHR$(192) + STRING$(10, CHR$(196)) + " " + CHR$(179) + " " + CHR$(196) +
CHR$(217)
3090 COLOR 14, 0
3100 LOCATE CSRLIN, COL: PRINT TOPEND$;
3110 LOCATE CSRLIN + 1, COL: PRINT TOPGAP$;
3120 LOCATE CSRLIN + 1, COL: PRINT LROD$;
3130 FOR I = 1 TO (INT(N + 1) / 2 - 1) ' Fill middle
3140 LOCATE CSRLIN + 1, COL: PRINT MIDGAP$;
3150 LOCATE CSRLIN + 1, COL: PRINT RROD$;
3160 LOCATE CSRLIN + 1, COL: PRINT MIDGAP$;
3170 LOCATE CSRLIN + 1, COL: PRINT LROD$;
3180 NEXT
3190 IF (N + 1) / 2 = INT((N + 1) / 2) THEN GOTO 3250
3200 LOCATE CSRLIN + 1, COL: PRINT MIDGAP$; ' Finish odd-number
3210 LOCATE CSRLIN + 1, COL: PRINT RROD$;
3220 LOCATE CSRLIN + 1, COL: PRINT ODDBGAP$;
3230 LOCATE CSRLIN + 1, COL: PRINT ODDBEND$;
3240 GOTO 3270
3250 LOCATE CSRLIN + 1, COL: PRINT EVNBGAP$; ' Finish even-number
3260 LOCATE CSRLIN + 1, COL: PRINT EVNBEND$;
3270 COLOR 7, 0
3280 RETURN
```

73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

2809. Re: duplexer for 2M, the

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 08:37:58 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Sep28.083758.7710@grian.cps.altadena.ca.us>
Source record: 116154

tom.alldread@kbsbbs.com (Tom Alldread) writes:

>Greetings Larry:

> I have been a radio amateur for about 30 years, I have my
>commercial ticket and my carreer was in telecommunications engineering.
>I have been involved in two home brew 2 metre duplexer projects.

> I can say from experience that building home brew duplexers is a
>major project that requires the tools and expertise of a good machinest
>plus the availability of expensive test equipment to properly tune up
>the duplexers once they are constructed. But it can be done with many
>many man hours of patient effort and they can be made to perform near
>equal to commercial duplexers but may never be as stable. A duplexer
>project was described in an old version of FM REPEATERS FOR THE RADIO
>AMATEUR ARRL publication (1972). They were fabricated from 4 inch
>copper drainage pipe. If you decide to build this set I have some advise
>about the harness cable lengths.

The comment about stability was not emphasized enough. The commercial
duplexers are made of an alloy that is not as sensitive to temperature
as regular copper. You may be able to build a 2m duplexer that works
very well, but it may be totally detuned the following winter.
On the other hand, if your repeater site is inside (or otherwise
thermally stable) it may work OK.

> My advise in general is that unless you have a lot of time
>available, get a great deal of personal satisfaction out of making your
>own duplexers, have the availability of a good machinest and access to a
>good spectrum analyzer with a tracking generator option you should put
>an effort into finding a good set of commercial duplexers from the used
>equipment market. Some commercial duplexers have been showing up on the
>surplus market for about $300 which is probably less than it would cost
>to build a set. Be carefull however to ensure that they can be tuned
>down to the 2 metre band. Some of the hybrid ring duplexers had the
>plunger rods cut off so they could be rack mounted and the cable harness
>is frequency sensitive. It can cost $300 for a new double shielded cable
>harness! Don't bother trying to utilize single shielded coax for the
>harness or the transmitter and receiver antenna cables. Single shielded
>coax is ok for the antenna feedline but you may wish to use a type of
>heliax there for loss considerations.

> It takes man months of effort to build a set of duplexers and it
>can be enough to fold a repeater club if you do not have the facilities
>and expertise available.

> Good luck with your project and most importantly have fun with
>it.

>73
>Tom, VE7TMA

>L>Yes Yes, I read all of that too, but our situation doesn't really
>L>allow either option. We can't do split site and we can't get enough
>L>vertical seperation to achieve 100 dB of attenuation. I would rather
>L>see the money for the extra antenna and coax (evey 5 years) go to the
>L>cost of the duplexers. I have to many irons in the fire and haven't
>L>I had time to start looking for compontents. have not recieved info
>L>I from anyone who has constructed a 2M duplexer. If do I will pass it
>L>on. --

I once saw a home-brew 2m duplexer on the RTTY repeater in the Los Angeles
area (what caught my eye was the chrome plated shower "C" handles on the
receiver cavity tuning screws and the "H" handles on the transmitter side...).
If someone has an older repeater directory (from the late 80s/early 90s)
look for a W6xxx-type callsign on a "Contractor's Point" site under
the SCATS club on 146.70. Look him up in the call book and drop him a note...
Look him up in the call book and drop him a note...
--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

2810. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 11:31:07 UTC
From: elendir@enst.fr
Message-ID: <36bk5r$l0e@cismsun.univ-lyon1.fr>
Source record: 116143

Edward Stafford (ted1@rsvl.unisys.com) wrote:
: What are these phonie sub bands? Is this a fictitious band?

: Desole Vincent, je sais que l'anglais n'est pas ta langue maternel mais j'ai
: bien aime la blague.

By sub bands, I mean that the 430 to 440 UHF band has been cut into various
"subbands". E.g. the 430-431 is devoted to repeaters, 431.25 to 431.75 is
packet, etc... (This is not the true mapping, but it s just to give an idea)
So we have the repeaters subband, packet subband, ATV subband, ...

BTW, our shift for UHF repeaters is 1.6 MHz, therefore all the upper part of
the band (434 to 440) is devoted to ATV.

73s !
Vincent
--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2811. Re: Interdigital Filter Design Program

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 11:34:35 UTC
From: elendir@enst.fr
Message-ID: <36bkcb$l0e@cismsun.univ-lyon1.fr>
Source record: 116144

ka7oei@uugate.wa7slg.ampr.ORG wrote:

: The following is a program for the design of interdigital filters, written
: for GWBASIC.
[...]

Thank you very much. I ll let you know if it works on my Atari Falcon.

73 !
Vincent
--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2812. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 11:35:28 UTC
From: elendir@enst.fr
Message-ID: <36bke0$l0e@cismsun.univ-lyon1.fr>
Source record: 116160

Ian G3SEK (G3SEK@ifwtech.demon.co.uk) wrote:

[...]

Thanks for the listing !

73 QRO.

Vincent, F1RCS

2813. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 11:47:48 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <36bl54$gab@proffa.cc.tut.fi>
Source record: 116145

elendir@enst.fr wrote:

> The site is already almost covered with various antennae.
> In fact, it's the highest place in the immediate viciny of Paris.

So, it is not the Eiffel tower, which has a really impressive antenna farm.
This farm has certainly grown since I wisited the place a few years ago :-)

> There are already two repeaters here, VHF and UHF.
> That would complete both.
> But there are also a whole bunch of professional repeaters.

Appearently you do not have any high power (> 1kW) transmitters on the site
and thus a notch type duplexers with some additional band-pass filtering
could do.

> : If you can install separate Rx and Tx antennas and move them as far as
> : possible from each other and you can get away with much simpler filters.
>
> Unfortunately, the antennae are installed atop a building, so I don't think
> there'll be much space...

With only one antenna this pretty much narrows down the choises to standard
cavity notch filters as Gary suggested. Duplexers with 6 MHz separation
are available at least from Sinclab (ph:+1-905-841-0624, fax:+1-905-841-2315)
with 70 dB deep notches.

> As you suggest, I could use a notch filter to remove the Tx frequency.
> Let's assume an output power of 50 W, and a receiver sensitivity of 100 nV.
> That'd mean something like +17 dB output and -157 dB input, 160 dB of loss.
> Of course, I have no idea a priori about the spurious power on the Rx
> frequency. Could I insert another notch filter in the Tx path to remove
> any energy at the Rx QRG ?

The standard practice in notch duplexers is to tune the _transmitter_
duplexer at the receiving frequency. If you really can get 100 nV sensivity
(-127 dBm) the noise floor is propably at -135 dBm (at 16 kHz bandwidth).
With a -70 dB notch, the transmitter phase noise at -6 MHz should be less
than -65 dBm or 112 dB below carrier (at 16 kHz BW) or -70 dBc/Hz at
-6 MHz offset, which is not a very stringent requirement.

A -70 dB notch at the transmitting frequency in the _receiver_ duplexer
will reduce the transmitter power from +57 dBm to -13 dBm which is still
a lot for a mid-UHF preamp and it will require a more than 100 dB dynamic
range. Clearly some additional filtering should be employed in order to
not to overload the mixer in the receiver.

> We have precisely the case here because our frequency is polluted by
> harmonics of a tracking system (SYLTRACK) every 15 kHz between 430 and
> 434 MHz, our phoniesub-band. Thus, each time we use the repeater, unless
> we have a very strong signal, we are covered by a horse like noise :-(

You need a 1291 MHz band-pass filter prior to the preamp, since the
attenuation is insignificant at 430 MHz in a notch type duplexer.
A 1/4 wave shorted stub (at 1291) might do the trick (or it might be
insufficient). To conclude, a duplexer, some bandpass filtering prior
to the preamp, a preamp with good strong signal handling characteristics
and some additional band-pass filtering between the preamp and the
receiver should be employed.

Paul OH3LWR

2814. Re: Interdigital filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 12:18:00 UTC
From: elendir@enst.fr
Message-ID: <36bmto$lua@cismsun.univ-lyon1.fr>
Source record: 116146

Kein{nen Paul (k23690@proffa.cc.tut.fi) wrote:
: elendir@enst.fr wrote:
: So, it is not the Eiffel tower, which has a really impressive antenna farm.
: This farm has certainly grown since I wisited the place a few years ago :-)

The Tour Eiffel is a high place, you re right. But it costs a lot of money to
install an antenna, because there is really little space. Still, there is a
400 to 1200 transponder here, courtesy of a commerical FM radio which gave a
small place to install it.
Whereas le Petit Clamart is on a hill - probably higher than the top of
la Tour Eiffel, and the roof is free !

: Appearently you do not have any high power (> 1kW) transmitters on the site
: and thus a notch type duplexers with some additional band-pass filtering
: could do.

I guess so.

[...]

: insufficient). To conclude, a duplexer, some bandpass filtering prior
: to the preamp, a preamp with good strong signal handling characteristics
: and some additional band-pass filtering between the preamp and the
: receiver should be employed.

Okay. I ll try to figure this out.

Thanks for your very kind advice. I ll let you know about this project if
you are interested...

Vincent
--
F1RCS - Worldwide Friendship through Amateur Radio
ENST, Ecole Nationale Superieure des Telecommunications, Paris

2815. Re: More on RC model Transmitters/Legalities

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 14:36:09 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <36bv0p$1o6l@yuma.ACNS.ColoState.EDU>
Source record: 116159

In article <092794211950Rnf0.79b4@ham.island.net> emd@ham.island.net writes:
>
>I haven't seen the earlier parts of this thread, but there are channels
>set aside for RC work ON six metres. From 50.8 to 50.98, every 20 KHz is
>a channel for RC. Granted, you need to be an amateur to use this, but why
>would the FCC frown on this?

He stated they were using RC to control models for filming movies. This
is a commercial use of amateur radio, and that's a very big NO-NO.

Galen, KF0YJ

2816. Can combine two 50MHz Tx

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 15:56:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9409281820421906@kbsbbs.com>
Source record: 116152

AC>Newsgroups: rec.radio.amateur.homebrew
AC>Path:
AC>holonet!colossus.holonet.net!agate!library.ucla.edu!csulb.edu!csus.ed
AC>u!ne From: acooney@netcom.com (Alan Cooney) Subject: Can combine two
AC>50MHz Tx signals? Message-ID: <acooneyCwpqqn.2J3@netcom.com>
AC>Summary: I'm looking for a broadband way to combine two 50MHz
AC>low-power signals Keywords: TRANSMIT BROADBAND COMBINER MULTIPLEXER
AC>RF SIX Organization: NETCOM On-line Communication Services (408
AC>261-4700 guest) Date: Mon, 26 Sep 1994 01:27:58 GMT
AC>Lines: 21

AC>Greetings:

AC>I'm looking for your suggestions on combining two or more six meter
AC>signals. These are in the 100 milliwatt range, and are relatively
AC>closely spaced (100-200 KHz). I need a broadband solution (untuned)
AC>if possible, so that the transmitter frequencies can be varied within
AC>a few hundred kilocycles or so without altering the need for a 'tune
AC>up'.
AC>What the heck is this for, you ask? I work for a company that builds
AC>remotely controlled models for the movie industry. We use six meter
AC>RC equipment with one power amp and antenna per RC 'channel', and
AC>that can add up to a rack of power amps and a field of antennas for a
AC>given shoot. We'd like to be able to combine at least two signals
AC>before amplification -- to cut the number of amps and antennas we
AC>have to fuss with.

AC>Any ideas? Cheers all. :)

AC>Alan
AC>WD6DES

Greetings Alan:

If you can accept 3 or 4 dB of loss (that would decrease your
output power to 40 mW or so per TX) an inexpensive combiner for two
signals could be made from a 75 Ohm CATV splitter connected up in
reverse (the combined tx signals come out the IN port). These splitters
typically provide isolation between the two output ports and are usually
designed to work from 5 to 300 MHz.

Make sure your amplifier is operated in a linear mode as
otherwise your tx signals will mix and generate intermodulation products
that could cause interference! I would suggest you do a careful test for
intermodulation in advance. Typical SSB amateur radio power amps just
may not be linear enough for intermodulation considerations.

73
Tom

Very Best Regards,

T.M. Alldread

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

2817. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 17:02:05 UTC
From: pramey@ram.NET
Message-ID: <00064.16003108@RAMail>
Source record: 116156

```
subscribe
```

2818. Re: Toroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 17:48:22 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <36ca96$a8v@tekadm1.cse.tek.com>
Source record: 116155

micron3@aol.com (Micron3):
>. . .
>It is my understanding that wrapping the coax around the torroid core
>is not very effective as so little of the cable is in contact with the
>core.
>You might want to try installing a "Current Balun" which consists of many
>torroids just big enough to pass over the cable. . .

Using multiple turns on a single core works fine, if the coax is small enough and the core large enough. This is what I use for all my antennas, with RG-174 coax. There's no benefit in having more or less of the cable be in contact with the core. Using multiple turns on a single core has a large advantage, in fact. The impedance goes up as the square of the number of turns, so 10 turns around a single core is equivalent to having 100 cores along the outside of the coax. The benefit to the W2DU approach (a string of cores on the outside) is that it's usable with large coax like RG-8.

Roy Lewallen, W7EL
roy.lewallen@tek.com

2819. Re: duplexer for 2M

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-28 22:21:33 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Sep28.162133.1@ualr.edu>
Source record: 116148

In article <369ehl$aj0@mrnews.mro.dec.com>, randolph@est.enet.dec.com (Tom Randolph) writes:
>
> In article <9409261820391867@kbsbbs.com>, tom.alldread@kbsbbs.com (Tom Alldread) writes...
>>Greetings Larry:
>> I can say from experience that building home brew duplexers is a
>>major project that requires the tools and expertise of a good machinest
>>plus the availability of expensive test equipment to properly tune up
>>the duplexers once they are constructed. But it can be done
>
> FWIW, there's an article in the April, 1979 QST on constructing a 2m duplexer
> from copperclad stock. It sounds easy enough, but you know how projects like
> this tend to expand to occupy all of your time. There's a lot of little details
> to take care of - for instance, the author recommends silver plating all
> interior surfaces, and polishing all hardware inside. Claimed isolation is
> 81 dB.
>
> -Tom R. N1OOQ randolph@est.enet.dec.com
Hi all:
Thanks for the responses. I was beginning to think that no one was out there.
In answer to your comments, the graduate program that I am enrolled in is
in applied science. Our faculty sponsor is a professor in this program. The
department (Applied Science) has a complete machine shop and several HP
spectrum analyzers. The Engineering Technology department is a co-sponsor and
has more test equipment than you can shake a stick at. BTW the machine shop
comes complete with a machinist, Who I can usually get to let me use the less
complicated equipment or talk into machining a part I can't make, time
permiting.
So the questions I have concern details that are not in the "ARRL ANTENNA
BOOK". Detailed schematics and test proceedures, etc.
73's
Larry

2820. Re: Please Recommend An Intro. Radio Book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 02:07:35 UTC
From: darrylb@delphi.com
Message-ID: <5211IJH.darrylb@delphi.com>
Source record: 116147

Lance Lascari WS2B <lascal@marcus.its.rpi.edu> writes:

>I would suggest "solid state design for the radio amateur" (I think
>that's the title.. I don't have a copy myself) published by the ARRL.
>I think it's merely $12 or so, and has lots of practical circuits as
>well as good discussion. The ARRL handbook is also a bible for this
>sort of information. Anybody have ordering information on the net? I
>think the ARRL has some sort of email info services on line.. I'll get
>back to ya if I figure them out.

Send e-mail to info@arrl.org. The only line in the text should be HELP.

2821. Re: WTB: a few NE561 pll chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 04:42:10 UTC
From: jbrown@cybernetics.net
Message-ID: <36dgj2$kcp@jabba.cybernetics.net>
Source record: 116161
Cross-posted to: rec.audio.tech,sci.electronics.repair,rec.radio.amateur.homebrew

Note to Tom Sefranek: Thanks for your note. All three of my attempts at e-mailing you a response have resulted in undelivered mail accompanied with the message "Servive unavailable". Perhaps you could send a message with your e-mail address in the body?

Jeff
--
Jeff Brown jbrown@cybernetics.net

2822. Re: Please Recommend An Intro. Radio Book

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 04:52:07 UTC
From: rrk@glock.ramp.com
Message-ID: <36dh5n$6gc@glock.ramp.com>
Source record: 116162

Lance Lascari WS2B (lascal@marcus.its.rpi.edu) wrote:
: Eric B. (browere@einstein.cs.ucdavis.edu) wrote:
: : I am very interested in how radio receivers/transmitters work and would
: : like someone to recommend a beginner book that is not infantile and
: : does contain experimentation circuits.

: I would suggest "solid state design for the radio amateur" (I think
: that's the title.. I don't have a copy myself) published by the ARRL.
: I think it's merely $12 or so, and has lots of practical circuits as
: well as good discussion. The ARRL handbook is also a bible for this
: sort of information. Anybody have ordering information on the net?

The ARRL can be reached at 225 Main Street, Newington, CT 06111-1494.
Their phone number is (203)-666-1541. Solid State Design is indeed
a worthy book for beginner and expert alike.

Richard Kendrick CET WA7TWI

2823. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 09:25:38 UTC
From: jwill@cabell.vcu.edu
Message-ID: <1994Sep29.092538.18283@cabell.vcu.edu>
Source record: 116157

What Terry says is correct. To make a good current baleun for 50 MHz
you will need some torroid cores to slip over the outside of the coax
right at the antenna feed..... A quick check of the ARRL Antenna
Handbook fives the following information about what type of torroids
to order from Amidon:

For RG-58 type coax: Use 50 of the FB-43-2401 Torroids

For RG-213 or RG-8 size coax:
Use 12 of the FB-43-1024 torroids.

Type 43 material is the stuff you want for VHF work. And Type 73 or
type 77 is the type you want for HF work.

Robert S. Williams, MD
KD4ZPH

2824. Yagi antenna anaysis program.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 09:43:14 UTC
From: davek@medphys.ucl.ac.uk
Message-ID: <1994Sep28.112229.49259@ucl.ac.uk>
Source record: 116158

I've written a program for the analysis of Yagi Uda antennas.

TITLE: YagiUda-1.0.tar.Z

PURPOSE: To analyse performance of Yagi-Uda antennas. You
give the dimensions and positions of each element, and the
program calculates gain, input impedance, front-to back ratio,
beam-patterns etc. An optimisation program 'optimise' tries to
optimise a design.

This can be had by anonymous ftp from:

medphys.ucl.ac.uk

username: anonymous
password: your e-mail address.

It in the directory /pub.

Note that the program does *not* presently run under DOS. It only runs on a unix machine. It has been compiled on both a Sun and a PC running unix.

Please feel free to ftp the file if you wish.

The programs are public domain, but I've used a few copy-righted routines for mathematical calculations from the book 'Numerical Recipes in C' by Press et al, Cambridge University Press, (1992). You will need to purchase this book to get the source for these - its *not* included in my distribution.

Dave Kirkby G8WRB.

2825. Re: duplexer for 2M, the

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 17:35:49 UTC
From: rdcole@crl.com
Message-ID: <36ettl$96m@crl4.crl.com>
Source record: 116163

Tom Alldread (tom.alldread@kbsbbs.com) wrote:
: I can say from experience that building home brew duplexers is a
: major project that requires the tools and expertise of a good machinest
: plus the availability of expensive test equipment to properly tune up
: the duplexers once they are constructed. But it can be done with many
: many man hours of patient effort and they can be made to perform near
: equal to commercial duplexers but may never be as stable. A duplexer
: project was described in an old version of FM REPEATERS FOR THE RADIO
: AMATEUR ARRL publication (1972). They were fabricated from 4 inch
: copper drainage pipe. If you decide to build this set I have some advise
: about the harness cable lengths.

[SNIP]

: equipment market. Some commercial duplexers have been showing up on the
: surplus market for about $300 which is probably less than it would cost
: to build a set.

I just picked up a 4 cavity Notch type duplever that was tuned to
147.160/147.760 in a Wallmount outdoor cabinet for $200 I was not really
in the market for a 2m duplexer but I will pick one up if they come along.
440 Dulexers are available all the time. I just can't see spending my
time attempting to build a duplexer. I have better things to do like
work on the controller of locating a better site.

Any one have a 4 or 6 cavity 6 meter duplexer ? Boy is this thing going
to be a monster. Have Larger truck will haul...

Ron
N5HYH

2826. Re: Need Help: measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 17:40:30 UTC
From: rdcole@crl.com
Message-ID: <36eu6e$999@crl4.crl.com>
Source record: 116165

Tom Kreyche (tkreyche@zdlabs.ziff.com) wrote:

: Why does the resistance appear to change with the magnet in place? Is it
: simply due to very small thermal movements, even though the coil is locked?
: or is something else going on, like changes in the earth's magnetic field
: or something more mundane?

Those would be my guess. Changes in the rarth'magnetic field, room
vibrations, thermal movements. With this much coil a very small change
will be very noticable on the meter.

Ron
N5HYH

2827. Help identifying some SMA devices and a circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-29 19:17:38 UTC
From: little@iamu.chi.dec.com
Message-ID: <36f3si$7k5@nntpd.lkg.dec.com>
Source record: 116164

I purchased a couple "black boxes" at a recent hamfest and am trying to
figure out what they are. They are built using surface mount devices
and I don't recognize the part numbers. Can anyone help me identify the
following components?

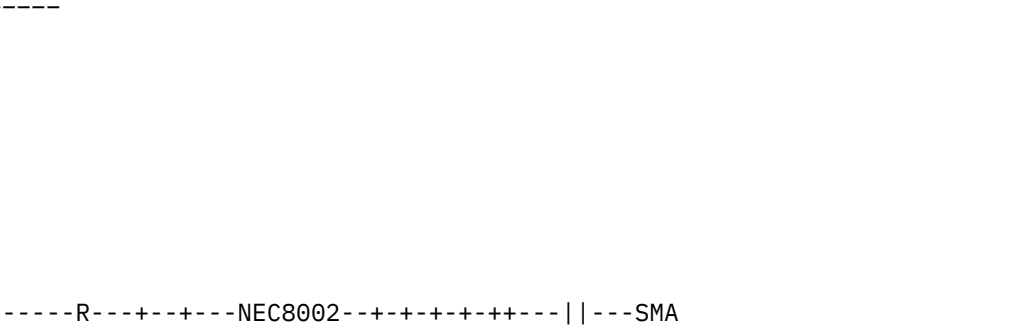
NEC part 8002 - appears to be 3 terminal white ceramic device as follows:

??? part GB 12 - appears to be a 4 terminal black plastic case:

??? part CJs81?? - appears to be a tiny 3 terminal black plastic case
and I'm not certain about the 81, it's written at a
90 degree angle to the CJs and is microscopic in size:

Also, how does one tell chip resistors from chip capacitors? I'm new to
surface mount technology.

My guess is the device is some sort of uhf/microwave amplifier given that
it has an SMA connector on each end and what appear to be two supply
voltages, Vcc and bias? From the SMAs there are coupling capacitors
leading to the NEC device with an apparent feedback loop. So it looks a little
like (if I got the resistors and caps right):



```
| || R R R R R
R Gnd +-+-+-+-+
+---------+---R-+-R-+ |
| C | L
+-GB | CJs |
-- ------R--------+ +------R---------+--- Voltage regulator,etc.
+-12
|
R
|
L---V? a line via a feedthrough cap
```

Why all the resistors in parallel? Current handling?

Any guesses or information would be greatly appreciated before I try
and fire these suckers up and sweep them.

73,
Todd
N9MWB

2828. HELP TS 940->PC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 02:13:15 UTC
From: ay935@FreeNet.Carleton.CA
Message-ID: <Cwx7I4.1Jo@freenet.carleton.ca>
Source record: 116019

Help needed for connecting TS 940 to IBM clone. I know you need
a IF 10B (chip in pc) + IC 232 (cable for radio to pc)
BIG $$$ wanted for those parts which I know there is a generic
equivilance
WANTED PART # FOR CHIP + CABLE + CONNECTORS +??
Thanks for all replies

2829. Re: Need NE561 PLL chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 09:37:35 UTC
From: tgm@netcom.com
Message-ID: <tgmCwxs2n.Mux@netcom.com>
Source record: 116018

mack@mails.imed.COM wrote:
: I believe that Phillips has discontinued the 561. However, the 564
: should be reasonably close in features unless that is the one that has
: all the neat AM synchronous detection stuff in it.

Yes, the 561 had all the neat synchronous AM detection stuff.
And it was discontinued almost 15 years ago (sigh). One way
of easily making a synchronous detector might be to have a 4046 pll
drive a 4066 analog switch.

Thomas KI4N
tgm@netcom.com

2830. Ultra-short range transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 10:58:53 UTC
From: Peter Gyorffy <74022.465@CompuServe.COM>
Message-ID: <36gr1d$6mm$1@mhadf.production.compuserve.com>
Source record: 116020

Greetings all

I have an application which requires several transmitters in a limited area, about 10 feet apart. I'd like to set it up so that the ranges of these transmitters do not overlap, and as a receiver moves it will receive from the closest transmitter, and no other. Kind of like cellular but in a room. Cross talk must be avoided.

Any suggestions as to the easiest way to adapt an existing transmitter (eg. RC) to this kind of application?

Or perhaps an FTP source of schematics for something along these lines?

I am GREEN in this area, not even sure what kind of radio band would be best suited to this application. Line of sight is not sufficient.

Thanks in advance for any advice you can provide

--

Peter Gyorffy Internet: pgyorffy@insightd.com
Compuserve: 74022,465

2831. Re: Ultra-short range transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 11:53:12 UTC
From: sct@po.cwru.edu
Message-ID: <36gu79$5dg@usenet.INS.CWRU.Edu>
Source record: 116021

This is something that happens to me a lot at work, in computers:
I get told the solution, but not the problem. Why do you want this
system of very short range transmitters and a receiver that will
receive from only one at a time? There may well be a better solution.

Stephen

--
Stephen Trier "Idiosyncratically euphuistic eccentricities are the
sct@po.cwru.edu promulgators of titurable obfuscation. What did you
KG8IH do last night? Enter into a meaningful romantic
involvement or fall in love?" -- United Technologies

2832. DIALS PostScript Files

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 13:21:20 UTC
From: ab4el@cybernetics.net
Message-ID: <36h3cg$i9@jabba.cybernetics.net>
Source record: 116022
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,sci.electronics

[The files referred to in the attached 'readme' can be retrieved by
anonymous ftp from two archive sites:

SunSITE.unc.edu (permanent)
/pub/academic/agriculture/agronomy/ham/things-to-build/na4g

ftp.Cybernetics.NET (temporary)
/pub/users/ab4el

For ease, the group of files have been 'rolled into one'...

dials.na4g.tar.Z (for Unix jocks)
dials.zip (using PKZIP 2.04g for MS-DOS users)

Don't forget to set 'binary' mode before 'get'...else they will
come to you as trash. :^)

de AB4EL]

---------------Cut Here-----------------

DESCRIPTION OF THE 'DIALS' ARCHIVE OF POSTSCRIPT FILES

* *
FILE: dials.readme

The files in this directory are a series of various types of radio
dial plates and dial decals that are useful to the home constructor.
These designs are copyright by Robert D. Keys, NA4G. Permission to
use these for any non-commercial amateur radio or antique radio
purpose is expressly given by the author.

The file collins2.ps is a replacement dial decal for the Collins
R-388/51J type radio receivers. Many of these receivers have very
poor dial drum decals that have flaked away with age. This replacement
dial drum decal can be very easily installed over the original, and it
will not affect the original in any way, if care is taken in the
installation process. To use, affix the top end of the replacement
dial drum decal over the original, careflully aligning it over the
original, as closely as possible, with a small piece of clear mylar
tape, at the sides. Wind the replacement dial drum decal over the
original and affix the bottom end with a long strip of clear mylar
tape. To remove, just carefully cut the tape and the replacement
dial drum decal will roll off. The original Collins dial drum decal
was black and red. My replacement decal is just black, and the type
font style is slightly different from the original. But, it is a
very close match at all the alignment points. The original dial

drum decals are very hard to find, but this replacement is very
nice in appearance, and looks just fine, installed.

The file dials.ps is an assemblage of various kinds of dial decals
and dial plates that I have used over the years. If you find any
of value, you are welcome to use them.

The file et8019a.ps is a replacement dial setting logging card for
an RMCA ET-8019A marine HF CW transmitter. It is useful for any
project that requires a dial setting logging card. Cut to suit
and mount.

The file namdial.ps is another assemblage of various kinds of
dial plates that may be useful. If you find any of value, you
are welcome to use them. Cut to suit and mount.

The file round2.ps is a dial plate patterned after the classic
National and Millen rectangular vernier dials. If you have a need
for a half-round vernier dial plate, then this may be what you need.
Cut and mount behind your vernier dial mechanism on the panel.
You will need a pointer of some kind with the vernier, for it to work
properly.

The file scale100.ps is a linear sliderule dial plate for anyone that
has the temerity to put together an old-fashioned '40s vintage type
sliderule dial mechanism. Xerox it up or down in size, to suit, and
mount on the panel under the sliderule pointer.

Most of these smaller decals or plates can be mounted to a panel with
double stick clear mylar adhesive tape. If you can xerox them onto
two-wide mailing labels, that can also be made to work quite well.
Alternatively, a dab of superglue or spray contact adhesive will also
work quite well. The larger decals or plates can be cut out and
mounted to a panel with screws at the locations of the dot screw holes.

Enjoy....

Boatanchor Bob

```
*************************************************************************
* 73 TU SU SK DE NA4G ``Boat Anchor Bob'', an ol' CW fart. *
*************************************************************************
* Morse has been in the family for over 100 years. *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914. *
*************************************************************************
* May you have fair winds and following seas on your watch at the key. *
*************************************************************************

********************* END OF README FILE **********************
```

2833. 300 Am Transmitter For Sa

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 13:53:00 UTC
From: joe.taylor@woodybbs.com
Message-ID: <93.2381.7584.0NFB443C@woodybbs.com>
Source record: 116024

Hi Skeeter:
Tell me more about your Transmitter for Sale.
Very 73 Joe Taylor N4NAS

• BgNet 1.0•12 • 049/000: Pipeline BBS - Glasgow, Ky - 502-651-2556

2834. Silver solder for SMT? (Was: Reuse surface mount parts?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 19:36:30 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CwyJsy.M34@srgenprp.sr.hp.com>
Source record: 116166

I guess it's my destiny in life to quash old-wive's tales on the Internet:

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: alanb@hpnmarb.sr.hp.com (Alan Bloom) writes:
: >Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
: >[Re: soldering surface-mount devices]
: >
: >: If ordinary solder (63-37 tin-lead) is used, the lead can almalgamate with
: >: the silver that is fired onto the component. The result is that you can
: >: no longer solder to it. You must use something like a "silver-saturated"
: >: solder, or the appropriate solder paste. (Note: this is not the same as
: >: "silver solder", which has a much higher melting point.)
: >
: >Wow, I never heard that before. We use standard tin-lead solder all the
: >time around here for soldering SMT devices.

: Heh, heh, maybe that's why Tektronix gear is so much more reliable. ...

: It's true that using ordinary solder can cause the silver to leach
: out of the contacts on SMD components. That can lead to connection
: failures. That's primarily an issue with leadless SMDs like caps
: and resistors. It doesn't apply to leaded ICs. Their leads are
: tin plated, and solder fine with ordinary solder.

Ian G3SEK (G3SEK@ifwtech.demon.co.uk) wrote:

>... or to put it another way, ordinary solder dissolves the silver out
> of the plating on the component. Obviously this phenomenon only affects
> ceramic-bodied compnents such as Rs, Cs and Ls. ICs and other devices
> with solid metal legs can be resoldered for as long as they hold together :-)

Just to be sure I wouldn't lead anyone astray, I checked with the
surface-mount technology expert here at work about soldering SMT devices.
He said that:

1. Standard tin-lead solder is used universally throughout the industry.
2. Nearly all modern SMT devices are solder-dipped. (i.e. no silver)
3. Of the few SMT devices that do have a silver plating, they add
palladium to the silver to improve solderability. Yes, some of the
plating does leach into the solder, but that only improves the joint.

I suspect the myth of using silver solder started back in the old days,
when chip components were not used on PC boards, but in microcircuits.

AL N1AL

2835. Wanted Heathkit SB401 manual

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-09-30 20:38:47 UTC
From: "Colin Schmutter"
Message-ID: <36ht0n$j7a@chopin.bcit.bc.ca>
Source record: 116167

I am trying to obtain a manual and schematic for a Heathkit SB401 transmitter.

If anyone can help, please email me at cschmutter@bcit.bc.ca

Thanks

2836. Re: Need Help: measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-01 06:25:34 UTC
From: wrt@eskimo.com
Message-ID: <CwzDs4.H17@eskimo.com>
Source record: 116023

Quite often this phenomenon is nothing more than RF energy being
picked up and rectified in the input stage of your meter. The source
could be a nearby commercial AM broadcast transmitter or any
other source whose output varies.... lotsa possibilites.

73, Bill

2837. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 01:46:14 UTC
From: acooney@netcom.com
Message-ID: <acooneyCx2q92.67G@netcom.com>
Source record: 116025

moritz@ipers1.e-technik.uni-stuttgart.de wrote:
: In article <1994Sep29.092538.18283@cabell.vcu.edu>,
: J. Sherwood Williams <jwill@cabell.vcu.edu> wrote:
: >
: > For RG-58 type coax: Use 50 of the FB-43-2401 Torroids
: ^^
: Is the price not around 1$ each? this would make an expensive antenna.

: Moritz DL5UH

I expect it would. I'm the one who made the original post, and would like to thank all who responded and shared their expertise with me. My solution came in the form of a 2 1/4" diameter ferrite torroid. Placed just below the feed point, I wound 14 turns of my RG58 feedline through it. VSWR was all over the scale with variations in moisture before, and now wavers almost imperceptibly under the same conditions. The torroid cost me US$2 at my local surplus store. The torroid does the trick, and is merely a 'current balun', or 'choke balun', as set forth in the ARRL literature and others. It works well, I can attest!

I was originally concerned about the possibility that the torroid was absorbing power, but am now convinced that isn't the case. The torroid raises the impedance of that particular path (the outside of the coax) at least at the frequency of interest, and so absorbs little to no power.

Thanks again to all who have helped me out. :)

Take care,
Alan
WD6DES

2838. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 03:37:02 UTC
From: ghiscox@netcom.com
Message-ID: <ghiscoxCx2vDr.JFL@netcom.com>
Source record: 116026

Micron3 (micron3@aol.com) wrote:
: In article <acooneyCwrz2B.Ht8@netcom.com>, acooney@netcom.com (Alan
: Cooney) writes:

: >So is that external energy
: >being absorbed by the ferrite (ie., wasted power), or is the torroid
: >giving me a high impedance 'choke' -- effectively just closing the door
: >on that rf path? Oh, and the frequency is ~50MHz.

: The energy is not being lost. You are correct in the assumption that the

: choke is "Closing the door on that rf path."
:
: It is my understanding that wrapping the coax around the torroid core
: is not very effective as so little of the cable is in contact with the
: core.
: You might want to try installing a "Current Balun" which consists of many
: torroids just big enough to pass over the cable. I beleive that Amidon
: amoung
: others will sell you the parts or finished units. Since you are
: operating at
: 50 MHz a typical HF balun won't work. You will need to specify that you
: need a balun that will work at 50 MHz. Hope this helps.

: Terry KJ7F
:

You might want to try using a ferrite donut out of an old color TV yoke.
Simply cut the copper wire off the donut. In your case you can wrap the
coax through the donut as many times as it will fit while still remaining
in contact with the ferrite.

I have also used these TV yoke ferrite donuts to eliminate TVI. You can
wrap both the line cord and the antenna coax through them and the TVI
disappears like magic!

Good luck, Mr. Phelps!

George L. Hiscox	THE PRICE OF LIBERTY
ghiscox@netcom.com	IS ETERNAL VIGILANCE
WA6RIK @ WB6YMH.#soca.ca.usa.na	^^^^^^^^^^^^^^^^^

2839. Is there a cheap 1200 baud data link out there?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 11:50:01 UTC
From: southagr@caedm.et.byu.edu
Message-ID: <southagr.6.009210FB@caedm.et.byu.edu>
Source record: 116031

I am looking for a low cost solution to radio linking low speed serial data. 1200 baud is fine, slower might be ok. I want to transmit from a metering station to an IBM about 1/2 to 2 miles away. I know that running cable would be simpler, but isn't very practical in my case.
I am looking into building my own Tx/Rcv pair, probably with the NE605, or MC3367 Rcvr, and a cookbook Tx, but since my experience is more in digital and less in radio, I'm having trouble rounding up the pieces the app. notes example circuits recomend. Digi-Key, Mouser etc. just don't seem to "do" radio. If someone has built such a pair, or if such is commercially available, I'd like to purchase rather than build. Alternatively, source recomendations (for the coils, filters etc.), proven schematics, advise, etc. would be very helpful.
Also, I've read chunks of CFR 47, and get the impression that 49Mhz would be the easiest freq. to deal with, but I would like to get my hands on a layman's guide to the subject. Does the ARRL publish anything specific to my type of project?
Thanks in advance,
Gordon Southam
southagr@caedm.et.byu.edu

2840. More on NE561 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 15:31:21 UTC
From: mack@mails.imed.COM
Message-ID: <9409037812.AA781202762@mails.imed.com>
Source record: 116027

>Thomas KI4N
>tgm@netcom.com writes:
>Yes, the 561 had all the neat synchronous AM detection stuff.
>And it was discontinued almost 15 years ago (sigh). One way
>of easily making a synchronous detector might be to have a 4046 pll
>drive a 4066 analog switch.

Unfortunately, my QST and RF Design collection is at home, but sometime during the past 24 months there was an article in QST and another in RF Design (I think) regarding AM syncronous detection. The article in QST used an FM chip such as a CA3089 as a synchronous detector. The individual pieces of these IC's can actually be used for AM type applications. The NE604 has external connections for some of these peices as well. One circuit in the QST article used a seperate PLL (such as the NE564) to generate the carrier and the other just hard limited the incoming signal to generate the carrier.

This article was aimed at detecting the proposed new DSB-SC and SSB-RC Shortwave broadcast signals.

Ray
WD5IFS
mack@mails.imed.com

2841. NA4G's "National Electrical Code for Hams"

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 16:17:38 UTC
From: ab4el@cybernetics.net
Message-ID: <36par2$jrs@jabba.cybernetics.net>
Source record: 116028
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.antennas

[At the end this are instructions for retrieving the file via Internet.]

%%%
% Article by Robert D. Keys (NA4G) on the National Electrical Code as it %
% may apply to amateur radio stations. This is an interpretation based %
% upon the author's experiences, studies, and reading of the Code. %
%%%
% This article is copyright, 1994 by Robert D. Keys (NA4G). %
% All rights reserved, worldwide. %
% Public non-commercial distribution of this work is authorized. %
%%%
% This article is typeset using the LaTeX Technical Typesetter. %
%%%
% REVISION OF 26 JAN, 1994 %
%%%

ABSTRACT

This work was presented as a talk to the Homebrew Special Interest Group (HB-SIG) of the Raleigh Amateur Radio Society (RARS), on 15 January, 1991 and was revised for another presentation on 26 January, 1994.

This document contains excerpts of the National Electrical Code (NFPA 70-1990) that, in the author's opinion, apply to the installation of amateur radio equipment as would commonly be found in most amateur radio stations. Direct excerpts from the Code are contained within inset quotations. Paraphrased excerpts from the Code are itemized. The author's interpretation and discussion of the Code is set full-width. The author's interpretation and discussion of various sections of the Code is not meant to be all-encompassing, nor the official interpretation of the National Fire Protection Association, nor of any offical governing body having legal authority of jurisdiction over electrical installations, but is meant to be used as a teaching tool for amateur radio operators.

Robert D. Keys, NA4G
Raleigh, NC,
25 September, 1994.

Enjoy
73 DE NA4G
Boatanchor Bob

```
**************************************************************************
* 73 TU SU SK DE NA4G ``Boat Anchor Bob'', an ol' CW fart. *
**************************************************************************
* Morse has been in the family for over 100 years. *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914. *
**************************************************************************
* May you have fair winds and following seas on your watch at the key. *
**************************************************************************

[ The files referred to in this 'readme' can be retrieved by
anonymous ftp from two archive sites:

SunSITE.unc.edu (permanent)
/pub/academic/agriculture/agronomy/ham/things-to-build/na4g

ftp.Cybernetics.NET (temporary)
/pub/users/ab4el

For ease, the group of files have been 'rolled into one'...

nec-1994.tar.Z 861,677 bytes (for Unix jocks)
nec-1994.zip 732,309 bytes (using PKZIP 2.04g for MS-DOS users)

Download one or the other according to your computer/print facilitites.

Don't forget to set 'binary' mode before 'get'...else they will
come to you as trash. :^)

de AB4EL ]

---------------Cut Here------------------
```

2842. WTB: UHF range][Syntor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 17:08:46 UTC
From: dodeca!clyde@ucrmath.ucr.edu
Message-ID: <2e903a9e.dodeca@dodeca.UUCP>
Source record: 116030

Want To Buy:

UHF range][Syntor. Please contact me at cvisser@ucrmath.ucr.edu .

crv

2843. Re: Can combine two 50MHz Tx

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 17:15:43 UTC
From: geertj@ripe.net
Message-ID: <Cx3xA7.B2r@inter.NL.net>
Source record: 116029

In <9409281820421906@kbsbbs.com> tom.alldread@kbsbbs.com (Tom Alldread) writes:

>AC>I'm looking for your suggestions on combining two or more six meter
>AC>signals. These are in the 100 milliwatt range, and are relatively
>AC>closely spaced (100-200 KHz). I need a broadband solution (untuned)
>AC>if possible, so that the transmitter frequencies can be varied within
>AC>a few hundred kilocycles or so without altering the need for a 'tune
>AC>up'.

> If you can accept 3 or 4 dB of loss (that would decrease your
>output power to 40 mW or so per TX) an inexpensive combiner for two
>signals could be made from a 75 Ohm CATV splitter connected up in
>reverse (the combined tx signals come out the IN port). These splitters
>typically provide isolation between the two output ports and are usually
>designed to work from 5 to 300 MHz.

Last time I checked, these consisted of just two 75 ohm resistors.
Yes, this is poor design. Anything goes in the CATV industry these days ;-).

You might want to look in ARRL's 'solid state design'.

73, Geert Jan PE1HZG

2844. Re: Need Help: measuring coil resistance

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 18:21:07 UTC
From: dtiller@cscsun.rmc.edu
Message-ID: <Cx40B7.6J3@cscsun.rmc.edu>
Source record: 116032

Tom Kreyche (tkreyche@zdlabs.ziff.com) wrote:
: Dear homebrewers,

: I'm working on a commerical seismometer (for measuring distant earthquakes)
: and don't understand some coil phenomena.

: The instrument has an coil of very fine wire (about #44) wound on a hollow
: plastic core, probably >> 5000 turns, about 1.5 inches in diameter.
: Horizontal earth movement causes this coil to move in and out of a strong
: magnet, which generates a changing voltage.

: If I remove the magnet and measure the coil resistance, it shows a rock
: steady 48.1 k ohms.

: With the magnet in place around the coil and with the coil locked so it
: can't move, the coil resistance bounces slowly betwee 47.6k and 48.5k.

I'd say the coil is moving somehow. Try using a small AC source and
measure the current thru it (calculating the resistance). The AC may
help stabilize the coil, and help damp out any tiny little movements.
Is the magnet a permanent type, or an electromagnet? If it's an e-magnet,
then tiny fluctuations in the 'primary' of this 'transformer' will create
large changes in the 'secondary.'
--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
"Drunk, [Beowulf] slew no | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
hearth companions." | Ashland, Va 23005 | 77d 31' 32.19" W |

2845. Re: More on RC model Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-03 18:24:49 UTC
From: dtiller@cscsun.rmc.edu
Message-ID: <Cx40HD.6LD@cscsun.rmc.edu>
Source record: 116033

Robert Smits (emd@ham.island.net) wrote:

: I haven't seen the earlier parts of this thread, but there are channels
: set aside for RC work ON six metres. From 50.8 to 50.98, every 20 KHz is
: a channel for RC. Granted, you need to be an amateur to use this, but why
: would the FCC frown on this?

'Cause he's doing it for business purposes, and I don't know if he's licensed
or not.

--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
"Drunk, [Beowulf] slew no | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
hearth companions." | Ashland, Va 23005 | 77d 31' 32.19" W |

2846. Re: Silver solder for SMT?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-04 00:17:34 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <36q6uu$fpo@tekadm1.cse.tek.com>
Source record: 116036

alanb@hpnmarb.sr.hp.com (Alan Bloom):

>I guess it's my destiny in life to quash old-wive's tales on the Internet:

>[stuff deleted]

>Just to be sure I wouldn't lead anyone astray, I checked with the
>surface-mount technology expert here at work about soldering SMT devices.
>He said that:

>1. Standard tin-lead solder is used universally throughout the industry.
>2. Nearly all modern SMT devices are solder-dipped. (i.e. no silver)
>3. Of the few SMT devices that do have a silver plating, they add
> palladium to the silver to improve solderability. Yes, some of the
> plating does leach into the solder, but that only improves the joint.

>I suspect the myth of using silver solder started back in the old days,
>when chip components were not used on PC boards, but in microcircuits.

>AL N1AL

Having worked for some years with hybrid circuits, I was ready to rebut Al's statement, since it went against my experience. However, I ran an experiment with some resistors and capacitors intended for PC SMT use, and support his conclusion. I alternately put solder onto the part's end, then removed it with Soder-Wick (tm). I did this using both 63/37 tin/lead solder and then with solder containing 3% silver. After ten applications/removals, the component metallization was still intact, at least to the point that contact could be made with the part.

I had run this test before on components with silver-palladium terminations (for conductive epoxy or solder attachment) and gold terminations (for wire bond attachment), and with pads on alumina hybrid substrate material. In all those cases, 63/37 solder leached the metallization off within a couple of cycles, whereas it took, as I recall, about half a dozen before the metallization disappeared when silver-bearing solder was used. So it isn't entirely an old wives' tale -- it just doesn't apply to modern solder-terminated SMT parts.

Old Tek scopes used to come with a little solder wrapped around one of the legs. This was silver-bearing solder to use when repairing the instrument, to prevent leaching the metallization off the ceramic strips which were used to mount components.

73,
Roy Lewallen, W7EL
Tektronix, Inc.

roy.lewallen@tek.com

2847. Re: duplexer for 2M, the

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-04 19:25:46 UTC
From: landisj@drager.com
Message-ID: <1994Oct4.152546.166@drager.com>
Source record: 116039

In article <36ettl$96m@crl4.crl.com>, rdcole@crl.com (Ron Cole) writes:
[...]
>
> Any one have a 4 or 6 cavity 6 meter duplexer ? Boy is this thing going
> to be a monster. Have Larger truck will haul...
>
>
> Ron
> N5HYH
>
Saw one at the Pack Rats hamfest this weekend; a 4 cavity job. He had 2 cavities
standing on either side of his pickup truck. They were for the 40 some mhz
range, and were about 5 feet long! I didn't catch his call, or the price, cuz
I'm not looking for em. But if I see them around again I will make a note of it.
Interested?
Joe - AA3GN
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@drager.com - Ax25: AA3GN@WA3TSW.#EPA.PA.USA.NOAM - ampr: [44.80.8.153]
Counting the days til deer season! Politically correct sig not available.

2848. Re: Homebrew Antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-04 19:40:02 UTC
From: acsys@crl.com
Message-ID: <36sb2i$er9@crl.crl.com>
Source record: 116037

Nikhil Natarajan (vp253dhq@ubvms.cc.buffalo.edu) wrote:
: Does anybody have any suggestions on a good homebrew J-pole? Another
: question is, does anybody know how to make a good antenna that is portable
: enough to be carried with you while you hike in the woods and could be
: set up there (a type of dipole perhaps)? If anybody has any input or directions
: could you please e-mail me at the address below. Thanks in advance.
: Nikhil N1HHJ
: vp253dhq@ubvms.cc.buffalo.edu

check alt.radio.pirate, look in the FAQ's there, there is a FTP site of
related info that has the designes for a j-pole and slim-jim.

mike

2849. More on RC model Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-04 20:17:47 UTC
From: rclayton@yorick.umd.edu
Message-ID: <36sd9b$4g9@umd5.umd.edu>
Source record: 116038

How hard would it be to convert a FUTABA FM radio from 72 Mhz to 50 Mhz? Would this be practicle? Where would I get the schematics? Thank's Rod KA3BHY

2850. Re: Torroid on feedline absorbs power?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 04:02:53 UTC
From: wrt@eskimo.com
Message-ID: <Cx6Ltq.75r@eskimo.com>
Source record: 116040

<36ammi$8t8@newsbf01.news.aol.com>
<1994Sep29.092538.18283@cabell.vcu.edu>

jeez guys, only ONE r in toroid, pleez!

2851. Reuse surface mount parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 07:50:29 UTC
From: jangus@skyld.grendel.com
Message-ID: <781343429snx@skyld.grendel.com>
Source record: 116051

In article <CwqzpG.HD3@hpcvsnz.cv.hp.com> tomb@lsid.hp.com writes:

> One thing of interest was their recommended mounting, in which the
> capacitors are spaced from their pads by a significant amount of solder;
> the solder is supposed to accomodate the differential thermal expansion
> between the board material and the capacitor substrate. They specifically
> recommended against mounting the capacitor hard against the board (pads).
> Just how you accomplish this in an automated IR or vapor phase reflow
> system I don't know, especially with components on both sides of the
> board.

Place-n-Pick mounting. The glue blob goes on the board first. You can
vary the height of the part by the diameter of the glue blob. It's all
N/C machine type operation, so it's fairly easy to specify all sorts of
parameter on each part, and not just the X-Y location.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding
Internet: jangus@skyld.grendel.com | a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749 | story."
Phone: 1 (310) 324-6080 | Peking Noodle Co.

Hate "Green Card Lottery"? Want to help curb ignorant crossposting on Usenet?
E-mail ckeroack@hamp.hampshire.edu for more information, or read news.groups.

2852. Favorite input circuit for freq. counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 11:31:32 UTC
From: sct@po.cwru.edu
Message-ID: <36u2qk$puh@usenet.INS.CWRU.Edu>
Source record: 116041

I'm working on homebrewing a frequency counter around an ICM7216.
The current challenge is finding a good input circuit. For HF,
capacitively coupling into a 74HC gate looks good. For higher
frequencies, I'd like to use a 74F prescaler, which offers questions
of its own. Should I square up the input and boost the input
capacitance with, say, a JFET preamp?

What's your favorite input circuit for frequency counting?

Stephen

--
Stephen Trier "Idiosyncratically euphuistic eccentricities are the
sct@po.cwru.edu promulgators of titurable obfuscation. What did you
KG8IH do last night? Enter into a meaningful romantic
involvement or fall in love?" -- United Technologies

2853. Re: Favorite input circuit for freq. counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 11:34:45 UTC
From: sct@po.cwru.edu
Message-ID: <36u30l$puh@usenet.INS.CWRU.Edu>
Source record: 116042

In article <36u2qk$puh@usenet.INS.CWRU.Edu>,
Stephen C. Trier <sct@po.cwru.edu> wrote:
> Should I square up the input and boost the input
> capacitance...

That's what I get for writing a message when I'm tired. Boost the input
impedance, Stephen, _impedance_. Obviously high input capacitance is
easy to get but not desirable. Sorry for the error.

Stephen

--
Stephen Trier "Idiosyncratically euphuistic eccentricities are the
sct@po.cwru.edu promulgators of titurable obfuscation. What did you
KG8IH do last night? Enter into a meaningful romantic
involvement or fall in love?" -- United Technologies

2854. coffee-can notch filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 12:09:52 UTC
From: kenb@qatrix.lonestar.org
Message-ID: <1994Oct5.120952.5557@qatrix.lonestar.org>
Source record: 116060

some time ago i ran across an article on the construction of coffee-can notch filters. i can't remember where, unfortunately. i've got an application where something like this would be quite helpful now and am trying to locate the information.

if anyone can point me to a reference, or provide me with some design and construction details, i'd be very appreciative.

thanks! please post here or reply to kenb@metronet.com.

ken brookner, n5lpi
kenb@metronet.com
kenb@qatrix.lonestar.org

2855. Re: duplexer for 2M, the

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 12:26:33 UTC
From: lascal@cii3112-19.its.rpi.edu
Message-ID: <36u61p$i6k@usenet.rpi.edu>
Source record: 116043

Joe Landis - Systems & Network Mgr (landisj@drager.com) wrote:

: Saw one at the Pack Rats hamfest this weekend; a 4 cavity job. He had 2 cavities
: standing on either side of his pickup truck. They were for the 40 some mhz
: range, and were about 5 feet long! I didn't catch his call, or the price, cuz
: I'm not looking for em. But if I see them around again I will make a note of it.

Yeah, I saw the guy at Pack Rats too... He was asking $75 per
can at the fest. A friend of mine (Doug Sharp, WB2KMY,
dsharp@lecs.ericsson.se) set a deal with him to buy a good portion of
his stock. SO, maybe there will be some available....I dunno They
looked nice though :)
-L

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2856. Re: Silver solder for SMT? (Was: Reuse surface mount parts?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 12:36:39 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <665521019wnr@ifwtech.demon.co.uk>
Source record: 116045

In article: <CwyJsy.M34@srgenprp.sr.hp.com> alanb@hpnmarb.sr.hp.com (Alan Bloom) writes:
>
> I guess it's my destiny in life to quash old-wive's tales on the Internet:
>
... quotes from previous articles in thread: Reuse surface mount parts?
..
>
> Just to be sure I wouldn't lead anyone astray, I checked with the
> surface-mount technology expert here at work about soldering SMT devices.
> He said that:
>
> 1. Standard tin-lead solder is used universally throughout the industry.
> 2. Nearly all modern SMT devices are solder-dipped. (i.e. no silver)
> 3. Of the few SMT devices that do have a silver plating, they add
> palladium to the silver to improve solderability. Yes, some of the
> plating does leach into the solder, but that only improves the joint.
>
> I suspect the myth of using silver solder started back in the old days,
> when chip components were not used on PC boards, but in microcircuits.
>
> AL N1AL
>

Please remember that the original thread was about *re-using* SM parts. The industry uses ordinary tin-lead for assembly, and SMDs are naturally designed with this once-only soldering operation in mind. But re-working of SMD boards and the re-use of parts brings in new considerations.

Here's an extract from the data on a grade of solder recommended for SMD rework (from the British RS catalog):

"LOW MELTING POINT
A grade of solder with composition 62% tin, 36% lead, 2% silver, which exhibits a very sharp (eutectic) melting transition... at 179C. The [low melting point] feature is useful when repairs on fabricated boards are required; by careful temperature control component displacement and thermal damage can be minimized.
The alloy is also exceptional in its wetting/flow capabilities and the silver content also prevents leaching when soldering to silver or gold plated surfaces, thereby preventing embrittlement...
The 24 and 26 swg wire [22 and 24 AWG] is ideal for repair/rework of surface mount boards."

So there are actually *three* features here: the low melting point, the superior wetting properties, and also the avoidance of leaching in those components that are prone to it.

Maybe Al is right: it could well be that the leaching feature is the least important of the three.

In practice the components that give most trouble are chip caps, which are generally the passive components we most want to recycle. I've certainly found that the low-melting silver-bearing solder helps with these - the "superior wetting" claim does seem to be true.

Obviously you need to suck away as much ordinary tin-lead as possible from the joint area first, and clean the bit of the iron before changing solders. Otherwise you're still working with mostly plain tin-lead.

Since the 62/36/2% composition has a uniquely low and sharp melting point, I'm sure it must be available in the USA and in other countries too. But don't just ask for "silver-bearing solder". There's also a grade of tin-lead-silver solder with an exceptionally *high* melting point!

73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

2857. Phase Noise

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 12:40:15 UTC
From: lascal@cii3112-19.its.rpi.edu
Message-ID: <36u6rf$i6k@usenet.rpi.edu>
Source record: 116044

Yo knowlegable hams,
(I must say this as I find my professors totally useless most of the time)

Can anyone out there point me to some good references on Phase Noise?
I have read the three part series on Phase noise in oscillators by
ulrich Rohde in QEX, as well as the chapter on oscillators in Rohde's
book. I guess I might have seen some other work, but I don't recall.
I am mainly curious in finding a good reference on the true effects of
phase noise rather than just "where it comes from and how to eliminate
it".

I think I understand the basics, I just want see some more
writing on the subject. This seems to be one of those things where
you get a different interpretation from everybody you talk to.

thanks much,
-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2858. aprs505e.exe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 17:05:11 UTC
From: igor@step.polymtl.ca
Message-ID: <36umc7$ftu@charles.cdec.polymtl.ca>
Source record: 116048

i would like to know an adress where i could get the file APRS505E.EXE

Mathieu Fortin

2859. Kenwood TS680/140 Computer Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 17:07:33 UTC
From: hbrown@nadir.resd
Message-ID: <1994Oct5.170733.18962@knight.vf.ge.com>
Source record: 116049

I've got a Kenwood TS680 transceiver that I would like to connect to a PC. My manual indicates that there is one but since this transceiver is no longer made, I'm looking for a used unit or a HB one. I'm also looking for MS DOS software for use with it. Does anyone have circuit info or know where I can find it (including control software)?

73, Harry, W3IIT
hbrown@resd.vf.ge.com

2860. Building a good directional coupler for VHF/UHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 17:18:29 UTC
From: jdc@cci.com
Message-ID: <Cx7Mqt.114@sunsrvr6.cci.com>
Source record: 116052
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I'd like to build a directional coupler for VHF and UHF power and SWR measurements. The ARRL Handbook has a project using copper tubing and a 'T' fitting. My Radio Shack SWR meter uses an etched PC board, while another SWR meter uses metal rods in a plastic holder.

Is there any advantage of one over another? Does the PC board version show impedence 'bumps' from being in one plane, as opposed to the copper-tubing version? Will RF radiate from the PC board? It certainly looks like the easiest to make, but is it any good?

73...Jim N2VNO

2861. Re: Phase Noise

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 18:31:08 UTC
From: steve@hi.com
Message-ID: <steve-0510941331080001@brainiac.hi.com>
Source record: 116050

In article <36u6rf$i6k@usenet.rpi.edu>, lascal@cii3112-19.its.rpi.edu (Lance Lascari WS2B) wrote:

> Can anyone out there point me to some good references on Phase Noise?
> I have read the three part series on Phase noise in oscillators by
> ulrich Rohde in QEX, as well as the chapter on oscillators in Rohde's
> book. I guess I might have seen some other work, but I don't recall.
> I am mainly curious in finding a good reference on the true effects of
> phase noise rather than just "where it comes from and how to eliminate
> it".
>
> I think I understand the basics, I just want see some more
> writing on the subject. This seems to be one of those things where
> you get a different interpretation from everybody you talk to.

Try the section on receiver characteristics in DeVoldere's "Low Band DXing", which is available through the ARRL. Or try this book:

"Communication Receivers, Principes and Design"
by Rohde and Bucher.

--
Steve Byan internet: steve@hi.com
Hitachi Computer Products (America), Inc.
1601 Trapelo Road phone: (617) 890-0444
Waltham, MA 02154 FAX: (617) 890-4998

2862. Re: Phase Noise

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 18:41:12 UTC
From: dara@physics.att.com
Message-ID: <Cx7qKo.6o9@nntpa.cb.att.com>
Source record: 116046

Lance Lascari WS2B (lascal@cii3112-19.its.rpi.edu) wrote:
: Yo knowlegable hams,
: (I must say this as I find my professors totally useless most of the time)

: Can anyone out there point me to some good references on Phase Noise?
: --
: Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
: Mount Greylock Expeditionairy Farce Secret agent #52,342

You might have a look at Phase Noise in Signal Sources
by W.P. Robins (don't know how to get it but hope it's
in your library). Also, try HP for reprints of product notes
discussing phase noise.

Shel Darack WA2UBK

2863. Re: Building a good directional coupler for VHF/UHF?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-05 20:30:09 UTC
From: zlau@arrl.org
Message-ID: <1994Oct5.203009.31482@arrl.org>
Source record: 116047
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

James D. Cronin N2VNO (jdc@cci.com) wrote:

: I'd like to build a directional coupler for VHF and UHF power and SWR
: measurements. The ARRL Handbook has a project using copper tubing and
: a 'T' fitting. My Radio Shack SWR meter uses an etched PC board, while
: another SWR meter uses metal rods in a plastic holder.

: Is there any advantage of one over another? Does the PC board version
: show impedence 'bumps' from being in one plane, as opposed to the
: copper-tubing version? Will RF radiate from the PC board? It certainly
: looks like the easiest to make, but is it any good?

Yes, the plumbing construction offers low loss, a definite advantage
if you intend to run high power or don't want to lose receiver sensitivity
by having something lossy in the transmission line.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2864. Re: Favorite input circuit for freq. counter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 03:22:13 UTC
From: rkarlqu@scd.hp.com
Message-ID: <36vqh5$c71@hpscit.sc.hp.com>
Source record: 116053

In article <36u2qk$puh@usenet.ins.cwru.edu>,
Stephen C. Trier <sct@po.cwru.edu> wrote:
>I'm working on homebrewing a frequency counter around an ICM7216.
>The current challenge is finding a good input circuit. For HF,
>capacitively coupling into a 74HC gate looks good. For higher
>frequencies, I'd like to use a 74F prescaler, which offers questions
>of its own. Should I square up the input and boost the input
>capacitance with, say, a JFET preamp?
>
>What's your favorite input circuit for frequency counting?
>
> Stephen
>
>--
>Stephen Trier "Idiosyncratically euphuistic eccentricities are the
>sct@po.cwru.edu promulgators of titurable obfuscation. What did you
>KG8IH do last night? Enter into a meaningful romantic
> involvement or fall in love?" -- United Technologies

Here at the HP Santa Clara Division where frequency counters are made,
the normal way of doing that is to use a high speed comparator such as
the AM686 (or its variations). You can use a 10H350 to convert from
ECL to TTL if necessary.

To get high input impedance to use a scope probe, a source follower
is switched in ahead of the comparator. A BF980 or similar makes
a good source follower.

Rick Karlquist (designer of the HP 5334B frequency counter)
rkarlqu@scd.hp.com

2865. Impedance calculator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 07:40:30 UTC
From: fontana@itnvax.science.unitn.it
Message-ID: <3709le$7n4@sirio.cineca.it>
Source record: 116059

I have uploaded to SimTel, the Coast to Coast Software Repository (tm),
(available by anonymous ftp from the primary mirror site OAK.Oakland.Edu
and its mirrors):

SimTel/msdos/hamradio/
rfmatch6.zip Hams: RF match calculator and optimizer

RF match calculator optimizer is a graphic impedance calculator. The
program can be used to match sources to loads with networks made with
impedances, inductors, capacitors, transmission lines, stubs and trans-
formers. Frequency and components can be trimmed on line and the result
is imediately shown. Frequency sweep and montecarlo simulation can be
used to evaluate the behaviour of the matching network. Autotuning
helps the user to find a solution to matching problems. A pop-up
calculator for complex numbers is also included.

Special requirements: EGA (VGA).

Changes: Frequency sweep with markers.
Licensed version: Mouse control of cursor. Ability to load a
file of start impedances.

rfmatch6.zip has replaced rfmatch5.zip.

ShareWare. Uploaded by the author.

Giorgio Fontana
fontana@itnvax.science.unitn.it

2866. Need 71488A for Atlas HF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 09:43:09 UTC
From: jacques.choquette@takeone.com
Message-ID: <9410061508001081@takeone.com>
Source record: 116058

I recently purchased this fine rig - Atlas 210X - which came with the
VOX and digital display external units. While using it for a special
event station the display quit. Troubleshooting brought it down to the
decoder chips. Problems is none of the electronic shops in town (Ottawa)
or RF Parts in California could help me. The set was manufactured in
1977 ans it seems chips that old are hard/impossible to get. Sow
ondering if anyone here could have some for sale or give me a place to
call to get/order some. Required is quantity (2) 74188A or 74LS188
chips. Thank you in advance for helping out, Jacques.
Alsl available on packet VE3TSC @ VE3KYT.

2867. Upconverter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 12:53:35 UTC
From: fai@cais.cais.com
Message-ID: <370s0f$ju9@news.cais.com>
Source record: 116062

I was wondering if any could help me in designing and making an upconverter to convert a 400 MHZ signal to 430 MHZ with a 50 ohm load. I know I need an occolator and a mixer but which ones? Do I need amplifiers, filters or anything? Does anything like this exist off the shelf? or in kits? any help would be apprecated!!

Mike Pulis
FAI@FACS.COM

2868. Mic impedence converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 15:01:25 UTC
From: salhany@bmerha9e.bnr.ca
Message-ID: <3713g5$rgu@bmerhc5e.bnr.ca>
Source record: 116056

I've acquired a headset (originally used for air traffic control) which
has a very nice boom mic on it.

My intent is to set it up to run VOX on my Kenwood 820. However, I suspect the
mic to be of the 600 ohm variety while the Kenwood expects a 50k ohm.

Any suggestions as to a nice, elegant impedence matching circuit or
a source for 50k ohm mic elements would be appreciated.

Thanks,

Wayne
VE3 WQS

Ottawa, ON

2869. Re: Mic impedence converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 16:13:12 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3717mo$2qio@yuma.ACNS.ColoState.EDU>
Source record: 116057

In article <3713g5$rgu@bmerhc5e.bnr.ca> salhany@bmerha9e.bnr.ca (Wayne Salhany) writes:
>I've acquired a headset (originally used for air traffic control) which
>has a very nice boom mic on it.
>My intent is to set it up to run VOX on my Kenwood 820. However, I suspect the
>mic to be of the 600 ohm variety while the Kenwood expects a 50k ohm.
>Any suggestions as to a nice, elegant impedence matching circuit or
>a source for 50k ohm mic elements would be appreciated.

I use a 600 ohm mic (Shure SM-58, just like Roger Daltry!!) and I had no
problems running it direct to my TS-820S. I tried a transformer to match
the impedances, and it made ABSOLUTLY NO DIFFERENCE!!

Just plug it in and go for it, Wayne!
Galen, KF0YJ

2870. Lead-Acid Charger

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 18:11:09 UTC
From: ss@JH.Org
Message-ID: <371ejt$8c5@snoopy.jh.org>
Source record: 116054

```
I want to build a battery charger for deep-cycle (marine) batteries.
I would like this to be the primary power for my gear. Currently
I have a dual band HT and an amp, drawing 7.5 amps (xmit). A
lowband rig would draw 20 amps on xmit. During emergencies
I guess I would run it QRP, but normally I would want to go
full power. We should probably add a laptop for packet, I have
no idea what they consume.

Would the battery be able to power such a setup for hours or days, assuming
standard xmit to receive ratios and the like? Is this a rediculous idea?
Should I buy a 20 or 35 amp power supply and forget the batteries?

If the batteries are feasible I will need a charger. There is
one in the ARRL Handbook (1994) using a 3906 (?) IC. I know
that the various resistor values will change for the voltage and
current loads that the battery needs but what about that
pass transistor? The article even says that it may not be
sensitive enough for heavy loads. Can someone suggest an
alternative transistor or schematic?

Thanks for your input!

--
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
ss@jh.org Steve Steinberg Radio Amateur Callsign: KB2RVE
```

2871. Siemens Mixer datasheet

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 22:02:30 UTC
From: dshalita@rogue.COM
Message-ID: <m0qszxQ-000EmFC@rogue.com>
Source record: 116055

Can someone possibly sned me a datasheet for an old Siemens
mixer IC. Looking for SO-42P, now obsolete and no datsheets available per
USA Siemens folks.
Please send to
David Shalita
7833 Cantaloupe Ave
Van Nuys, CA 91402

Need input impedance to mixer port and output port impdenace.

Thanks, desperate,
73 Dave,
w6mik
--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

2872. Using Overtone Crystals For Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-06 22:49:01 UTC
From: mack@mails.imed.COM
Message-ID: <9409067814.AA781488109@mails.imed.com>
Source record: 116066

>Date: 20 Sep 1994 06:34:18 GMT
>From:
>ihnp4.ucsd.edu!munnari.oz.au!newsroom.utas.edu.au!news@network.ucsd.e
du
>Subject: Overtone Crystal Filter
>Ian wrote:

>Electronics Australia published an SSB receiver with an IF of 8MHZ
>using 3 8MHZ computer xtals in a ladder network configuration. All
>the capacitors were 100pF. The article said using a ladder network
>enabled the xtals to be all resonant at the same frequency.

>Can the same idea be used with overtone xtals? For example, I would
>like to build a 48MHz IF filter.

>Thanks for any info, Ian

Well, I took this as a personal challenge to find out what's what. I hooked up 3 48MHz microprocessor crystals to the network analyser. These crystals were CTS model MP-480. I measured them at 16 MHz and at 48 MHz for their equivalent circuits. At 16 MHz they showed very good response with about 3 ohms equivalent series resistance and Q over 100,000. At 48 MHz 2 showed good Q of about 160,000 and 15 Ohms equivalent resistance. The third had much better series R of only 9 Ohms, but the Q was considerably less and it was also not a good match for frequency.

I used the design equations from the May 1982 QST article (Hayward) for 2, 3, and 5 element filters. They all showed reasonable calculated values as long as the bandwidth was between 1000 Hz and 3000 Hz. Outside these limits either the capacitors got really small or the load impedance for the filter got really small. In the 2500 to 3000 Hz range the load impedance is high enough that there is minimal insetion loss.

The 2 element filter I built with the 2 good crystals from my parts bin showed good agreement with the formulas when measured on the network analyser.

Digi-Key sells microprocessor crystals for about US $1.35 in this frequecy range or 10 for US $11.00. This is cheap enough to buy a bunch and select for matching.

I hope this gives you encouragement to try this, Ian. Here is a short bibliography of articles which should help if you try to build a filter. I have arranged them in order of the amount of help they were to me:

QST May 1982 pp 21-27
Communications Quarterly Winter 1993 pp 11-18
QST Nov 1980 pp 20-23
QST Jul 1987 pp 24-29

I seem to recall one in an old issue of RF Design but I haven't had time to look for it.

Ray
WD5IFS
mack@mails.imed.com

2873. Re: Homebrew Antennas for cordless phones

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 07:59:54 UTC
From: laforest.snowcrest.net
Message-ID: <laforest.snowcrest.net-0710940056230001@ppp0.mtshasta.snowcrest.net>
Source record: 116063

Does anyone know if the range of cordless phones can be extended by adding a long wire to the end of the antenna?

This digitial cordless phone uses 900 mhertz frequency... and should the antenna be any particular length to optimize its effectiveness?

I'm wondering because I heard that digital cordless phones might have up to 4 times the range of standard cordless phones...(700' max), ... so I'm wondering if a 1/2 mile range is possible?

thanks

Dale LaForest
e:mail at

laforest@snowcrest.net
(916)926-5115

2874. Cordless Phone Reciever?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 11:21:04 UTC
From: fleming@mcs.com
Message-ID: <fleming.14.00E9972A@mcs.com>
Source record: 116071

Does anyone know where there might be a schematic/parts list, or article,
about building a receiver for standard (non-digital) cordless phone
transmissions? I think they're somewhere in the 49 Mhz range, identified by
1-10 channels. Anyone Help?
Thanks,
John Fleming, N9NDH

"May your Sandcastles | John Fleming |
as big as the beach" | johnflem@mcs.com |
| "opinions are free, advice will cost you"|
==========

2875. Help ID'ing SDT components???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 11:31:02 UTC
From: jimn0oct@aol.com
Message-ID: <373bhm$nru@newsbf01.news.aol.com>
Source record: 116061

I need some help ID'ing some transistors which arent' cross referenced in the NTE book or in any catalogs I have handy:

SDT5554 small signal transistor

SDT7605 powwer transistor

These were pulled from an instrument power supply, and if applicable, will become part of a new power supply for the Amateur Service.

Thanks in advance!
73, jim n0oct

2876. QRP Mailing list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 13:18:00 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.781535637@atl1>
Source record: 116069

Frank posted a request for how to subscribe to the QRP mailing list. I tried to thread but got the message back for some reason. Anyway, you can subscribe by sending message to

listserv@netcom.com

The subject does not matter but in the body of the message put

subscribe qrp-l

If you don't like the 20 -30 messages that you get per day(there is no digest right now), you can send another message with the body being unsubscribe qrp-l

Good luck, Jim, W4QO
---

fro@xs4all.nl (Frank R. Oppedijk) writes:

>Dear fellow hams,
>
>(Sorry for posting this in a not so appropriate place.)
>
>In this newsgroup I read about a QRP mailing list, lately. Unfortunately, the
>post did not mention a subscribe address. Could someone please be so kind to
>drop me an email message with how to subscribe? TIA!
>
>73,
>
>Frank, PA3FLV
>fro@xs4all.nl

2877. Need INFO on HAL CRI-200 RTTY Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 14:45:34 UTC
From: rdkeys@csemail.cropsci.ncsu.edu
Message-ID: <373mue$p66@taco.cc.ncsu.edu>
Source record: 116064
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello Friend Hams.....

I have just purchased a HAL CRI-200 Computer RTTY Interface and am
looking to find some information on same.

1. Does anyone have a manual that I could get a xerox of?

2. What is the power voltage and polarity required at the dc power
adapter socket on the back panel (+12vdc? GND=SHELL?).

3. What is the pinout and interface specifications on the 5 pin
computer I/O port connector? I am assuming RS-232, but it could
be something funky like 5V tty RS-232, or it might even be current
loop (20 ma).

4. What are the cw keying polarities on the two keying jacks?
Any Help is appreciated

Most Sincerely,
Robert D. Keys, ``Boatanchor Bob'', NA4G
rdkeys@csemail.cropsci.ncsu.edu

p.s. What in the world am I doing playing around with non-vacuum-tube
technology..... (:+}}.....

```
**************************************************************************
* 73 TU SU VA DE NA4G ``Boat Anchor Bob'', an ol' CW fart. *
**************************************************************************
* Morse has been in the family for over 100 years. *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914. *
**************************************************************************
* May you have fair winds and following seas on your watch at the key. *
**************************************************************************
```

2878. Re: Dead Atlas transceiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 15:15:44 UTC
From: mack@mails.imed.COM
Message-ID: <9409077815.AA781547468@mails.imed.com>
Source record: 116068

>VE3TSC wrote:
>Subject: Need 71488A for Atlas HF

>I recently purchased this fine rig - Atlas 210X - which came with the
>VOX and digital display external units. While using it for a special
>event station the display quit. Troubleshooting brought it down to
>the
>decoder chips. Problems is none of the electronic shops in town
>(Ottawa)
>or RF Parts in California could help me. The set was manufactured in
>1977 ans it seems chips that old are hard/impossible to get. Sow
>ondering if anyone here could have some for sale or give me a place
>to
>call to get/order some. Required is quantity (2) 74188A or 74LS188
>chips. Thank you in advance for helping out, Jacques.

Jaques:

You can get the chips you want through Digi-Key but they won't help
you any. The problem is that they are bipolar PROM's. You will need
a copy of the service manual which hopefully lists the program for the
chips. Perhaps Atlas is still in business and you can get either the
already programmed version or they can supply the bit pattern for the
parts.

If you get the bit pattern and the parts I can burn the PROM's for you
or perhaps someone locally can do it for you.

Ray

2879. Re: Mic impedence converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 15:17:30 UTC
From: salhany@bmerha9e.bnr.ca
Message-ID: <373oqa$eij@bmerhc5e.bnr.ca>
Source record: 116075

Thanks to all who replied...

Last evening I gave a few options a try and it looks like I'll have to build
a small Op Amp circuit as the output is too low to drive the rig without.

Thanks again,

Wayne
VE3WQS

2880. Re: aprs505e.exe

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 15:40:48 UTC
From: landisj@drager.com
Message-ID: <1994Oct7.114048.172@drager.com>
Source record: 116073

In article <36umc7$ftu@charles.cdec.polymtl.ca>, igor@step.polymtl.ca (Mathieu Fortin) writes:
> i would like to know an adress where i could get the file APRS505E.EXE
>
> Mathieu Fortin
>

Try /pub/msdos/packet at OAK.Oakland.edu
Joe - AA3GN
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@drager.com - Ax25: AA3GN@WA3TSW.#EPA.PA.USA.NOAM - ampr: [44.80.8.153]
Counting the days til deer season! Politically correct sig not available.

2881. NA4G presents: Batteries, Chargers, Charging

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 17:31:50 UTC
From: ab4el@cybernetics.net
Message-ID: <3740m6$gji@jabba.cybernetics.net>
Source record: 116074
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,sci.electronics

```
[ Instructions for retrieving 'batterie.ps' are at the bottom of
this message. ]
******************************************************************************

The following article (batterie.ps) is a short article about batteries
and battery charging. It covers many types of batteries that amateurs
might find useful around the hamshack. It does not cover small HT
style batteries, although the principles would be similar.

Most of the batteries that I use are from the local scrapyard, and
were junked from industrial lighting systems, etc. I can usually
get a couple of years of service out of almost any of them, with
a little care, and some thought about bringing them back up to snuff.

******************************************************************************

REVISION of 6 OCTOBER, 1994.

THE JUNIOR OPERATOR'S GUIDE BATTERIES, BATTERY CHARGERS, AND
BATTERY CHARGING.

A Practical Compendium of All That Junk You Might Want to
Know.

By Robert D. Keys, NA4G

Addenda to a presentation by Alan Pitegoff (AB4OZ) and
Robert D. ``Boat Anchor Bob'' Keys (NA4G) to the Homebrew
Special Interest Group of the Raleigh Amateur Radio Society
(RARS) 26 August, 1992 and 26 May, 1993.

The following document contains excerpts taken from numerous
sources. Where possible, full citation of said sources in
given. Where not possible, as full a citation as possible,
based upon the author's existing information is given. This
document is placed in the public domain and is freely
copyable and distributable.

Robert D. Keys, NA4G
Raleigh, NC,
25 September, 1994.

******************************************************************************

Enjoy
73 DE NA4G
Boatanchor Bob
```

```
**************************************************************************
* 73 TU SU SK DE NA4G ``Boat Anchor Bob'', an ol' CW fart. *
**************************************************************************
* Morse has been in the family for over 100 years. *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914. *
**************************************************************************
* May you have fair winds and following seas on your watch at the key. *
**************************************************************************

[ The files referred to in this 'readme' can be retrieved by
anonymous ftp from two archive sites:

SunSITE.unc.edu (permanent)
/pub/academic/agriculture/agronomy/ham/things-to-build/na4g

ftp.Cybernetics.NET (temporary -- easier to get in)
/pub/users/ab4el

For ease, the group of files have been 'rolled into one'...

batterie.tar.Z (for Unix jocks)
batterie.zip (using PKZIP 2.04g for MS-DOS users)

Don't forget to set 'binary' mode before 'get'...else they will
come to you as trash. :^)

de AB4EL ]

---------------Cut Here-----------------
```

2882. INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 17:37:12 UTC
From: pelt@vt.edu
Message-ID: <pelt-0710941337220001@box185.ams.vt.edu>
Source record: 116072

QST

Can anyone give me some advice on a good piece of equipment for measuring inductances. I have an LCR meter (LCR 195) which I purchased from Alpha Elec. several years ago. This meter works great for measuring capacitance but just doesn't get it for measuring small inductances (uh range).

Tnx for the help.

de nz4i Randy

--
Ranson Pelt
pelt@vt.edu
QST de nz4i

2883. Search for Homebrew SW Receiver Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 17:57:37 UTC
From: asmith@utkvx.utk.edu
Message-ID: <asmith-071094135729@emis_q700.ed.ornl.gov>
Source record: 116065

Does anyone know of FTP or other source of plans for building a simple
SW Receiver?
Thanks,
asmith@utkvx.utk.edu

2884. Re: NA4G presents: Batteries, Chargers, Charging

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 20:22:30 UTC
From: jbs@duke.edu
Message-ID: <374am6$d6q@news.duke.edu>
Source record: 116067
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,sci.electronics

In article <3740m6$gji@jabba.cybernetics.net> ab4el@cybernetics.net (Stephen Modena) writes:
>[Instructions for retrieving 'batterie.ps' are at the bottom of
> this message.]
...
>
>[The files referred to in this 'readme' can be retrieved by
> anonymous ftp from two archive sites:
>
> SunSITE.unc.edu (permanent)
> /pub/academic/agriculture/agronomy/ham/things-to-build/na4g
>
> ftp.Cybernetics.NET (temporary -- easier to get in)
> /pub/users/ab4el
> /batterie.zip (using PKZIP 2.04g for MS-DOS users)

There's an error in batterie.zip at the second site. The copy at the first site is fine.

-joe
--
"When personal freedom's being abused, | "I have an open mind, about everything you have to move to limit it." | it needs to be open about."
|
- U.S. President Bill Clinton, 1994 | - George Greene 9/13/94

2885. Where can I mailorder parts on the Internet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-07 23:51:15 UTC
From: s2202629@np.ac.sg
Message-ID: <374mtj$kcp@nova.np.ac.sg>
Source record: 116086

I'd like to know if there's anywhere on the net I can mailorder for stuffs in the Radio Shack or Maplin catalog or any other major electronics companies (Are they called that?)

I'd like to pickup a couple of stuffs, and would want to find out how much it'd cost me and the things like that first, and if nothing else, it'd save on time & postage sending it _there_ in the first place.

2886. Re: QRP Mailing list

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-08 00:45:13 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CxBwrD.3L9@news.Hawaii.Edu>
Source record: 116070

In article <w4qo.781535637@atl1> w4qo@peach.america.net (James C. Stafford) writes:
>Frank posted a request for how to subscribe to the QRP mailing list. I
>tried to thread but got the message back for some reason. Anyway, you can
>subscribe by sending message to
>
>listserv@netcom.com
>
>The subject does not matter but in the body of the message put
>
>subscribe qrp-l
>
>If you don't like the 20 -30 messages that you get per day(there is no
>digest right now), you can send another message with the body being
>unsubscribe qrp-l

Well, there is a daily and 3-day digest available via ftp:
ftp sunsite.unc.edu then
cd pub/academic/agriculture/agronomy
then do a `dir' and look for DAILY.QRP and `get' it.

Jeff NH6IL

2887. Biasing tetrode tube - affects gain?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-08 03:09:29 UTC
From: dgf@netcom.com
Message-ID: <dgfCxC3Ft.Gs2@netcom.com>
Source record: 116077

I'm slowly progressing on a passive grid driven 4-1000 amp. I can either bias it as a regular tetrode per eimac specs (some screen voltage and some grid voltage as appropriate), or bias it as if it were going to be run like a grounded grid triode (ground the screen, DC ground the control grid, and AC ground the cathode, with a few volts of zener bias in the cathode DC path as would be done for grounded grid).

Anyway, it seems like it would be much simpler to use the grounded-grid style biasing (remember, the tube would still be grid driven, so it is _not_ a regular grounded grid circuit).

Would these two approaches yield different gain in the amplifier, all other things (AC circuit parameters) being equal? I want to take the passive grid driven approach to (1) avoid the tuned input needed for a grounded grid amp, and (2) reduce drive requirements to about 50W for full output.

Thanks for any insights!

73 Dave WB0GAZ dgf@netcom.com

2888. Re: INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-08 13:10:07 UTC
From: jimn0oct@aol.com
Message-ID: <3765nf$it3@newsbf01.news.aol.com>
Source record: 116076

In article <pelt-0710941337220001@box185.ams.vt.edu>, pelt@vt.edu (Ranson J. Pelt) writes:

that he needs something to measure small inductances.

How small?? Are we talking microhenries or nano henries?? If micro, the Autek RF analyzer is real handy for those measurements, and they are done at the frequency of interest. I have one, and am a satisfied customer, not an agent of Autek.

73, jim n0oct

2889. Fractional turns on toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 01:06:03 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct08.210603.16886@wb3ffv.wb3ffv.ampr.org>
Source record: 116078

The June 1994 issue of QST had an article, "Inexpensive Interference Filters", where the author specified fractional turns on toroidal cores. (Specifically, he gave tap points at fractional turns.) I was always under the impression that the general rule of thumb was to count one turn through the center of a toroid as a turn, and not to worry about fractional turns. Indeed, several carefully controlled experiments with relatively large cores (1" and up) over several sessions, on a Boonton 260A Q meter, gave thoroughly inconclusive results. Sometimes the addition of a fractional turn gave an increase in inductance (slight), sometimes no difference, and sometimes--I swear this is true--it even indicated a slight reduction. These tests were done with fairly similar methodology, but over a period of time and with a variety of cores. I did not document them thoroughly, but may repeat them in the future. (And yes, I did try as hard as possible to freeze all turns in place with Q dope, keep leads from the coils to the fixturing as rigid and unmovable as possible, etc.) Has anyone experimented, under closely controlled conditions, with fractional turns on toroids and proven whether or not they are worth worrying about? (As the author himself admits in the text, and as many homebrewers have known and proven over the years, "the coils inductance won't always be exact because of variations in core permeability and winding technique.") 73 de WA8MCQ

2890. Re: cordless phone reciev

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 04:40:00 UTC
From: ulis.fleming@woodybbs.com
Message-ID: <93.2482.7584.0NFB463D@woodybbs.com>
Source record: 116083

Fl> Does anyone know where there might be a schematic/parts list, or
Fl> article, about building a receiver for standard (non-digital) cordless
Fl> phone transmissions? I think they're somewhere in the 49 Mhz range,
Fl> identified by 1-10 channels. Anyone Help?
Fl> Thanks,
Fl> John Fleming, N9NDH
Most of the Flemings I know could careless about ham radio, scanners,
etc. We must be the odd balls in the clan.
-73 Ulis Fleming WB3LUI

PS-The cordless phones use 46 MHZ for the base unit (both sides heard)
and 49 MHZ for the handset (one side heard)

... WB3LUI @ WB3V.MD.USA.NA
___ Blue Wave/QWK v2.12

--- PCB15.1/2-GEcho 1.02
* Origin: BORDERTECH BBS, HAMPSTEAD,MD *USA* 410.239.4247 (1:261/1355)

2891. can square wave oscil (4046) be used for vfo/bfo's ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 07:35:15 UTC
From: mike@io.org
Message-ID: <3786fj$ki7@ionews.io.org>
Source record: 116079

Can a square wave oscillator, such as the oscillator in a 4046 pll be used either as a bfo or vfo?

If not, is this because of the many harmonics generated by a square wave?

Specifically I'm trying to build a direct conversion receiver using the 4046 and a 1596 mixer.

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

2892. Re: can square wave oscil (4046) be used for vfo/bfo's ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 13:28:10 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <378r5a$omo@usenet.rpi.edu>
Source record: 116080

Mike Stramba (mike@io.org) wrote:
: Can a square wave oscillator, such as the oscillator in a 4046 pll be used
: either as a bfo or vfo?

: If not, is this because of the many harmonics generated by a square wave?

: Specifically I'm trying to build a direct conversion receiver using the 4046
: and a 1596 mixer.

Yep, I believe that will work WELL. There has been some discussion
about how square wave LO's work better than sinewave LO's. I don't
know the whole reasoning behind it, but it has something to do with
the very short rise/fall times as compared to sinewave LO's.
Apparently, these edges are where a great deal of IMD products are
generated (makes sense if you think about it).

anyway... go for it. THere is one version of the 4046... that
goes to 12 MHz or so, its the 74hc4046 or something like that...

-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2893. Re: Search for Homebrew SW Receiver Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 17:17:02 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.781722935@atl1>
Source record: 116081

asmith@utkvx.utk.edu (A.L. Smith) writes:

>Does anyone know of FTP or other source of plans for building a simple
>SW Receiver?
>Thanks,
>asmith@utkvx.utk.edu
TenTec has a regenerative sw kit for about 17 bux. I have it but have
not built it yet. It includes a nice little front panel. Let me know if
you do not know what TenTec is.

2894. Re: can square wave oscil (4046) be used for vfo/bfo's ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 18:17:07 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct9.181707.23358@ke4zv.atl.ga.us>
Source record: 116082

In article <3786fj$ki7@ionews.io.org> mike@io.org (Mike Stramba) writes:
>Can a square wave oscillator, such as the oscillator in a 4046 pll be used
>either as a bfo or vfo?
>
>If not, is this because of the many harmonics generated by a square wave?
>
>Specifically I'm trying to build a direct conversion receiver using the 4046
>and a 1596 mixer.

Diode ring mixers work *best* with high level squarewave drive. The
diodes are shifted through their non-linear region quickly which produces
fewer distortion products. The harmonics of a squarewave are all the
odd order products starting with the 3rd harmonic of the fundamental.
That puts them far enough away that a relatively simple post-mixer
filter can handle them.

The 1596, though is an easily crunched mixer. It doesn't like high
level drive. You might be better served with a diode ring mixer.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2895. Re: cordless phone reciev

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 21:59:27 UTC
From: fd@wwa.com
Message-ID: <379p3v$kkq@sashimi.wwa.com>
Source record: 116084

Ulis Fleming (ulis.fleming@woodybbs.com) wrote:
: Fl> Does anyone know where there might be a schematic/parts list, or
: Fl> article, about building a receiver for standard (non-digital) cordless
: Fl> phone transmissions? I think they're somewhere in the 49 Mhz range,
: Fl> identified by 1-10 channels. Anyone Help?
: Fl> Thanks,
: Fl> John Fleming, N9NDH
: Most of the Flemings I know could careless about ham radio, scanners,
: etc. We must be the odd balls in the clan.
: -73 Ulis Fleming WB3LUI

: PS-The cordless phones use 46 MHZ for the base unit (both sides heard)
: and 49 MHZ for the handset (one side heard)

So, the Digital Wiretap Act outlawed the monitoring of Cordless Phone
Calls? Same as Cellular Now?

SEC. 202. CORDLESS TELEPHONES.
(a) Definitions.--Section 2510 of title 18, United States
Code, is amended--
(1) in paragraph (1), by striking ", but such term does not
include" and all that follows through "base unit"; and
(2) in paragraph (12), by striking subparagraph (A) and
redesignating subparagraphs (B), (C), and (D) as
subparagraphs (A), (B), and (C), respectively.
(b) Penalty.--Section 2511 of title 18, United States Code,
is amended--
(1) in subsection (4)(b)(i) by inserting "a cordless
telephone communication that is transmitted between the
cordless telephone handset and the base unit," after
"cellular telephone communication,"; and
(2) in subsection (4)(b)(ii) by inserting "a cordless
telephone communication that is transmitted between the
cordless telephone handset and the base unit," after
"cellular telephone communication,".
--

Glen L. Roberts, Editor, Full Disclosure
Host Full Disclosure Live (WWCR 5,065 khz - Sundays 7pm central)
email fd@sashimi.wwa.com for catalog on privacy & surveillance.
KEVIN MITNICK DISGUISE KIT: From your fax: (708) 356-9646 doc #903
email for uuencoded .TIF of T-Shirt Honoring the FBI

2896. Re: Fractional turns on toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 22:26:18 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CxFFnv.HCH@srgenprp.sr.hp.com>
Source record: 116085

Mike Czuhajewski (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
: The June 1994 issue of QST had an article, "Inexpensive Interference
: Filters", where the author specified fractional turns on toroidal
: cores. (Specifically, he gave tap points at fractional turns.) ...

Since I was the author of the article, I'll answer the question.

I don't have the article in front of me, but I don't recall listing
fractional turns for the main windings. I agree that it is not possible
to achieve a fractional turn: So long as the two wire ends are connected
through the rest of the circuit, the turn is effectively completed anyway.

I did list fractional turns for the coil tap points. You can think of
the tapped coils as RF autotransformers. The exact tap location
definitely affects the impedance ratio.

AL N1AL

2897. Re: Lead-Acid Charger

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-09 23:55:46 UTC
From: beau@enterprise.america.com
Message-ID: <379vu2$nbr@enterprise.america.com>
Source record: 116087

I have used you idea for about 3 years now and it has worked fine.
My HF rig draws about 20 amps when in tx. I run my packet station
from this source also.

I have a voltmeter at the desk to monitor the battery condition.
I have never seen it below 12V. The battery I use is a deep cycle
Gel-cell. The charge is maintained by the "Battery Watch Dog"
charger described in the ARRL handbook. It can be left hooked to the
battery permanently. It will not overcharge the battery.
The apporox 1.5 amp charge rate seems to be sufficient.

_/ _/
_/ _/
_/ Internet = beau@enterprise.america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/

2898. Re: Where can I mailorder parts on the Internet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 00:06:19 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CxFKAJ.zs@news.Hawaii.Edu>
Source record: 116088

s2202629@np.ac.sg (Teh Aik Wen) writes:

>I'd like to know if there's anywhere on the net I can mailorder for
>stuffs in the Radio Shack or Maplin catalog or any other major electronics
>companies (Are they called that?)
>
>I'd like to pickup a couple of stuffs, and would want to find out how
>much it'd cost me and the things like that first, and if nothing else,
>it'd save on time & postage sending it _there_ in the first place.
>

Teh - One ham company has internet access; the owner posted a
sale notice on r.r.a.misc and got flamed so badly that he
set up an email reflector to notify subscribers of upcoming
sales, prices, and such. Can't recall what company that was -
can someone help out?

I like the idea of shopping via internet. I'm surprised stores
haven't set up ftp sites so that you can view their catalog
items and prices.

73 from Warm and Sunny Hawaii,
Jeff NH6IL

2899. does anyone know anything about the HM-2102 swr meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 01:30:22 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <CxFo6n.8s9@rahul.net>
Source record: 116089

i recently purchased a heathkit hm-2102 swr meter. i would like to know how to calibrate it and what the knob that says "pull to set swr sens." means. i can't figure out how to measure forward/reflected power with it so basicall i want to figure out how to align it. also if anyone out there knows what bands this thing will work on that will also be apprecciated.

thank you,
mlyon@rahul.net

--
Mike Lyon <mlyon@rahul.net>

2900. Radar Gun (K-Band)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 05:42:28 UTC
From: co722@cleveland.Freenet.Edu
Message-ID: <37ak84$hsi@usenet.INS.CWRU.Edu>
Source record: 116090
Cross-posted to: rec.radio.scanner,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

This is being posted for a friend. I can answer as many questions as
I know the answers for, via E-mail.

For Sale

K-Band Radar *GUN* unit.

Operates on 24Ghz
(Some may be tempted to alter the radio to work in the ham-band, this
is why this has been cross posted to .homebrew and .equipment)
Runs off 12VDC (Comes with 12VDC Cigarette Lighter Plug)

This has been advertised on various newsgroups before, but the seller
lost their net access along with all prospective purchasers.

(2 or 3 were interested and bidding)

Their addresses have been lost along with the mailbox of the account
which was nuked.

If you are interested, simply reply here. I'm helping my friend sell
this unit.

*** Possible Items for Trade or Trade w/Cash ***

-Mobile scanner with 46mhz, VHF, UHF, 800 including Cel Tel, Etc.
-Dual Band 2m/440 Mobile radio with detachable faceplate.

*** Asking Price ***

$250 Cash (Repair shop lists this unit at $500)

Purchaser pays all s&h, No COD's.
^
^- Thus purchaser chooses options of shipper, insurance, etc.

"I've used this unit various times to clock different targets. It has
come in very handy for a friend who was clocking his high performace
car at the track. "

(You could acctually clock cars at a race with this if you bought an
easy to carry 12vdc power source)

*** All interested replies ***

Direct your replies to me via e-mail at:

br260@po.cwru.edu

If you have problems with the above address, you can send mail to:

root@b63062.cwru.edu (ONLY if the above address does not work)

If sending mail to the root address, make the subject of your
mail state: Pass this on to the old 'jbourne'

Thanks!

2901. Re: INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 08:50:38 UTC
From: claude@bauv111.bauv.unibw-muenchen.de
Message-ID: <claude.781779038@bauv111>
Source record: 116091

pelt@vt.edu (Ranson J. Pelt) writes:

>QST

>Can anyone give me some advice on a good piece of equipment for measuring
>inductances. I have an LCR meter (LCR 195) which I purchased from Alpha
>Elec. several years ago. This meter works great for measuring capacitance
>but just doesn't get it for measuring small inductances (uh range).

In the HF area, you can use:

- a RF bridge

- a vector impedance meter

- a Q-meter

--
Claude F. (claude@bauv106.bauv.unibw-muenchen.de)

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

2902. HELP!!! How to Record on a Digital Format "Unattended"?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 12:09:00 UTC
From: Ken Terry <ken_terry@macmail.eng.gulfaero.com>
Message-ID: <37bassINNdpb@gulfaero.com>
Source record: 116092

I am trying to record unattended data from my icom while I am at work, but regular audio tape does not give me the resolution I need. Either DAT or minidisk was recommended. However, I cannot keep my computer on all day to control the recorder due to afternoon lightening storms (my icom runs on a battery very effeciently). If you have been able to record unattended signals on a digital format, please let me know the secret.

In advance->Thank you very much!!

Ken
ken_terry@macmail.eng.gulfaero.com

2903. Re: Need 71488A for Atlas HF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 13:44:42 UTC
From: landisj@drager.com
Message-ID: <1994Oct10.094442.177@drager.com>
Source record: 116093

In article <9410061508001081@takeone.com>, jacques.choquette@takeone.com (Jacques Choquette) writes:
> I recently purchased this fine rig - Atlas 210X - which came with the
> VOX and digital display external units. While using it for a special
> event station the display quit. Troubleshooting brought it down to the
> decoder chips. Problems is none of the electronic shops in town (Ottawa)
> or RF Parts in California could help me. The set was manufactured in
> 1977 ans it seems chips that old are hard/impossible to get. Sow
> ondering if anyone here could have some for sale or give me a place to
> call to get/order some. Required is quantity (2) 74188A or 74LS188
> chips. Thank you in advance for helping out, Jacques.
> Alsl available on packet VE3TSC @ VE3KYT.

Digi key stocks the Natl. 74S188 32x8 bipolar prom for $1.50. This will work. Of course you're going to have to get the program, find a prom programmer for this one, and burn the prom. Is Atlas still around? I'd try getting this one thru them, if they are. Oh, Digikey is at 1-800-DIGIKEY.

Joe
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@drager.com - Ax25: AA3GN@WA3TSW.#EPA.PA.USA.NOAM - ampr: [44.80.8.153]
Counting the days til deer season! Politically correct sig not available.

2904. More on Using 49MHz for Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 14:49:11 UTC
From: mack@mails.imed.COM
Message-ID: <9409107818.AA781804774@mails.imed.com>
Source record: 116106

Gentlemen:

Now that we have the specs out in the group (thanks much) it is
easier to design a solution for the requestor.

It appears to me that Part 15 ONLY applies to the transmitter part
of the setup. Therefor, it is possible to greatly increase the range
by using a directional gain antenna.

My proposed solution is this:

1) build the transmitter to take advantage of the 100mW limit.
2) build a short loaded horizontally polarized dipole.
3) build (or buy) a 4 to 5 element Yagi. This should give about
10 db of gain and has the additional benefit of rejecting most
of the signals from other users of the band. It is possible to
buy a 6M beam and just tune it down to 49 MHz.

Remenber that Part 15 devices must ACCEPT all interference they may
encounter.

Ray
WD5IFS
mack@mails.imed.com

2905. does anyone have the phone number for heathkit?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 16:44:14 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <CxGuHr.3CB@rahul.net>
Source record: 116095

i heard that heathkit still sells parts for there products. if anyone out there has the phone number for them it would be appreciated if you could e-mail it to me or just post it.

thank you,
mlyon@rahul.net

--
Mike Lyon <mlyon@rahul.net>

2906. FOR SALE : DEAD YAESU FT-747 (FOR PARTS?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 17:19:46 UTC
From: rossi@VFL.Paramax.COM
Message-ID: <1994Oct10.171946.9660@VFL.Paramax.COM>
Source record: 116097
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I friend of mine has a dead Yaesu FT-747 HF transceiver that was damaged in shipment (UPS). I have not seen the radio but I was told that the top was slightly dented and the front panel looks like someone removed it with a crowbar. The basic radio carcass looks to be in reasonable shape but the front panel is pretty much a gonner. Yaesu wants over $400 to repair it.

Fortunately it was insured. UPS paid the claim and returned the dead radio.

Anybody want it? Probably has lots of good parts. Make an offer.
I will pass the info along.

==========
Pete Rossi - WA3NNA rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania
==========

2907. Re: Lead-Acid Charger

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 19:21:52 UTC
From: mack@ncifcrf.gov
Message-ID: <CxH1sG.LAC@ncifcrf.gov>
Source record: 116094

In article <371ejt$8c5@snoopy.jh.org> ss@JH.Org (Steve Steinberg) writes:
>I want to build a battery charger for deep-cycle (marine) batteries.

Dear Steve
Do you want a battery cahrger or do you want to build one? For
a charger you don't need a regulated supply, just something that shuts
off at 13.5V or so. YOu can do this with a regular charger from anywhere,
by putting an SCR in the output. Connect the anode of the SCR to the old
output, the cathode of the SCR to the output, put a 14V zener from the
gate to earth and a 5k resistor from the anode to the gate. WHen the
battery goes above about 13V the SCR shuts off. Joe Mack NA3T, mack@ncifcrf.gov

2908. Help with Plotter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 19:53:26 UTC
From: dshalita@rogue.COM
Message-ID: <m0quPqi-000EmEC@rogue.com>
Source record: 116100

I was recently given an old HP-7475A Pen Plotter, to use, if
I could, for small homebrew printed circuit boards. This plotter
has an HP-IB interface and my PADS shareware IBM PC386 can only
drive plotters thru the RS-232C serial port. This plotter was on
an old Commodore Business Computer System.

I'm looking for any low cost solutions to my problem. Any suggestions?
I don't know if a used IEEE-488 card in my PC386 would solve anything?

Can't put a lot of money into this unit. I need to know if I have:
1. A working PLotter.
Yes it does complete the self test image.
2. My software(s) can really produce artwork with it.

Thanks and 73 de Dave, W6MIK
dshalita@rogue.com

--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

2909. Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-10 20:38:56 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.781821419@atl1>
Source record: 116096

I posted this in the qrp mailing list the other day and have had some
good responses. Any ideas?

I am helping a high school student - KC4ROW - do some work with various
"fruit" and "vegetable" batteries for a science fair project. We both
feel that it would enhance the exhibit part of the project to have a
Lemon Powered QSO. We can build up a little milli-watt rig such as the
fine article on page 18 of QST, March 1992, but what I'm looking for are
suggestions on a receiver we can use. Here are some discussion items:

1. A DC receiver that draws less than 10 ma, is there one? I think we can
generate 10 ma from a lemon juice battery. We can use an external audio
amp on "commerical" power.
2. A crystal set - Ok we could use an "external BFO", IE another
transmitter offset by 500 hz hidden nearby. Kinda seems like cheating
though, but we could power it from a lemon too.
3. An R-390 powered by an inverter and 3,000,000 lemons for 11 seconds!

Any ideas appreciated. I have quite a large supply of QRP magazines for
the past 5 years so you could refer me to one of those. Also, maybe we
could have some kind of "Lemon juice" challenge for the farthest QSO on
say 40 meters using only two lemons as power.

72/73, Jim Stafford, W4QO RadioActive Schools -
11395 West Road Using amateur radio as a tool to
Roswell, GA 30075 enhance the classroom experience
404-993-9500 in the North Georiga area.
Packet: w4qo@wa4bro.#atl.ga.usa.na Email: w4qo@america.net

2910. Using a 74HC4046 be used for an LO in a receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 00:00:17 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <18239@uugate.wa7slg.ampr.org>
Source record: 116103

I'm not sure that I would want to use the VCO in a 74HC4046 in a receiver
if you run it higher than several hundred KHz...

You'll likely have to be very careful to watch the phase noise of the oscillator
when you get into the MHz area... Much of it may depend on the loop bandwidth
and its possibly inherent ability to suppress that sort of noise. It all
depends on your particular application.

If you are over several hundred KHz, you may want to build a varactor-tuned
VCO and use the phase/frequency detect portion of the chip for that.

One possible lineup is to use a VCO, followed by a driver (to generate
a squarewave) to dump into, say, a 74HC4059 (as the divide-by-n) and
use the phase/frequency detector.

This sort of scheme will work well for frequencies up to about 10 MHz or
so with step sizes of 1 KHz or so. If you wanted smaller steps, you would
likely need a more complicated scheme... There are actually many possible
options...

As it turns out, a VCO on the 4046 is not particularly "phase quiet" at
higher frequencies... If you application is insensitive to phase noise
(i.e. some sort of simple, wide-bandwidth receiver) then it may be just fine.
If you need to have low incidental FM and/or narrow bandwidth, then the
phase noise issue becomes important...

<Clint>

2911. Re: does anyone have the phone number for heathkit?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 00:11:47 UTC
From: aswNS@newhamp.hampshire.edu
Message-ID: <37cl83$hip@gort.oit.umass.edu>
Source record: 116102

Mike Lyon (mlyon@rahul.net) wrote:
: i heard that heathkit still sells parts for there products. if anyone out

The phone number was 616-925-5899 as of July 1994.

73, Al N1AW

Albert S. Woodhull, Hampshire College, Amherst, MA
awoodhull@hamp.hampshire.edu

2912. RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 01:50:58 UTC
From: magoo871@raven.csrv.uidaho.edu
Message-ID: <37cr23$56s@owl.csrv.uidaho.edu>
Source record: 116098

Help! Anyone know where I can get an RF switch suitable for PC mount and controllable by TTL? Power need is low, max +20dbm, but it needs to have *good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches aren't acceptable because they have bleed thru. Sure appreciate any advice. What do the hi-bandwidth o-scope manufacturers use?

--
Thanks, Steve Email: magoo871@uidaho.edu
U of Idaho, Moscow, Idaho.

2913. Re: Where can I mailorder parts on the Internet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 02:24:47 UTC
From: rdcole@crl.com
Message-ID: <37ct1f$385@crl3.crl.com>
Source record: 116099

Teh Aik Wen (s2202629@np.ac.sg) wrote:
: I'd like to know if there's anywhere on the net I can mailorder for
: stuffs in the Radio Shack or Maplin catalog or any other major electronics
: companies (Are they called that?)

I read an article about an Electronics supply Company in CA. that is selling over the internet. Marshall Industries. There was no other information about how to contact then company just a quick intervew with the CO Pres. about being the first to do it. Seemed like it was San Mateo (sp?)

Ron

2914. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 02:41:59 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <37cu1n$d4c@usenet.rpi.edu>
Source record: 116104

Magoon Steve (magoo871@raven.csrv.uidaho.edu) wrote:
: Help! Anyone know where I can get an RF switch suitable for PC mount and
: controllable by TTL? Power need is low, max +20dbm, but it needs to have
: *good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
: aren't acceptable because they have bleed thru. Sure appreciate any
: advice. What do the hi-bandwidth o-scope manufacturers use?

I've been looking for the same sort of thing... but that will go up to
3.5 GHz... MA-COMM has some good stuff, try them. Otherwise rolling
your own PIN switch might be the only good route...

-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

2915. Re Inductance measuring

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 05:12:06 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct11.011206.29731@wb3ffv.wb3ffv.ampr.org>
Source record: 116101

And let me put in my vote for a Boonton 260A Q meter; I have a pair, and they are neat items...and quite expensive thirty years ago. You may occasionally see one at a hamfest; I wouldn't pay anything over (or anywhere near) $100. I was lucky--I paid $20 for the more expensive of my two, and both work perfectly. Pitfalls: it uses a thermocouple to drive one of the meters, and if that is burned out it seriously reduces the value of the instrument, although there are ways of working around that. Also, although most of the tubes are 7 and 9 pin miniatures, the detector tube is one of the old style with 6 pins--two fat, 4 skinny, and a grid cap on top. It's basically a 2A6, although Boonton sold special versions with their own part number on it. If that's bad, replacement could be a problem, although you could design some other detector circuit. One final note--there are many different Boonton Q meters out there; for something to cover the HF spectrum, the 260A is the latest model. There are earlier versions such as the 100A and 160A, and there is also one (or more?) VHF versions; I have the 190A, covering 20-260 MHz. The 260A covers 50 KHz to 50 MHz and is quite useful for measuring coils typically used at HF. 73 DE WA8MCQ

2916. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 13:44:31 UTC
From: glenn.champion@gtri.gatech.edu
Message-ID: <glenn.champion.39.0@gtri.gatech.edu>
Source record: 116115

In article <37cr23$56s@owl.csrv.uidaho.edu> magoo871@raven.csrv.uidaho.edu (Magoon Steve) writes:
>Help! Anyone know where I can get an RF switch suitable for PC mount and
>controllable by TTL? Power need is low, max +20dbm, but it needs to have
>*good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
>aren't acceptable because they have bleed thru. Sure appreciate any
>advice. What do the hi-bandwidth o-scope manufacturers use?
>
>--
> Thanks, Steve Email: magoo871@uidaho.edu
> U of Idaho, Moscow, Idaho.

Steve, you can use two (or three or four) Mini-Circuits switches in series to get whatever isolation you want. Only tradeoffs are price and the additional insertion loss. I have constructed 10nS pulse modulators like this with great on/off ratios.

2917. Wanted: High Voltage tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 14:31:05 UTC
From: charnoft@wfu.edu
Message-ID: <37e7j9$4u6@eis.wfunet.wfu.edu>
Source record: 116105

I'm looking for some tubes (preferably triodes, but not necessarilly)
that can handle from 10 to 25 kV. If you have any thoughts, please send me a
note.
Thanks!

--
* * * * *
Olin Physical Lab | The more the pity that fools may not speak
Wake Forest University | wisely what wise men do foolishly.
Winston-Salem, NC | --Touchstone

2918. Re: More on Using 49MHz for Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 15:02:09 UTC
From: rdcole@crl.com
Message-ID: <37e9dh$1oi@crl.crl.com>
Source record: 116116

mack@mails.imed.COM wrote:
: It appears to me that Part 15 ONLY applies to the transmitter part
: of the setup. Therefor, it is possible to greatly increase the range
: by using a directional gain antenna.

These 49Mhz Radios are designed based on Field Strength. This
taks into account hte antenna used. CHangin the antenna on one voids
the FCC acceptance.

: 1) build the transmitter to take advantage of the 100mW limit.
Will this be a Type Accepted Radio ?

: 2) build a short loaded horizontally polarized dipole.

: 3) build (or buy) a 4 to 5 element Yagi. This should give about
: 10 db of gain and has the additional benefit of rejecting most
: of the signals from other users of the band. It is possible to
: buy a 6M beam and just tune it down to 49 MHz.

Be carefull on the 6m beam, many ar FM cut, 52 Mhz and just don't
have enough metal to drop 2.25 Mhz in to the 49.7Mhz range. Maybe a 6M
bean designed for SSB/CW 50-51 would work + it's Horizontal, away from the
noise. :)

Ron

2919. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 16:22:43 UTC
From: dmiller@crl.com
Message-ID: <37ee4j$6ha@crl.crl.com>
Source record: 116107

Magoon Steve (magoo871@raven.csrv.uidaho.edu) wrote:
: Help! Anyone know where I can get an RF switch suitable for PC mount and
: controllable by TTL? Power need is low, max +20dbm, but it needs to have
: *good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
: aren't acceptable because they have bleed thru. Sure appreciate any
: advice. What do the hi-bandwidth o-scope manufacturers use?

If the electromechanical route is acceptible, Omron used to have some
good RF PCB mount relays that worked really well up to about 1 GHz.
I don't have a P/N, but hopefully knowing a manufacturer to check out
will help.

Good Luck!

--

Don Miller My opinions are my own!
dmiller@crl.com

2920. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 17:59:11 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <37ejpf$iqi@info2.rus.uni-stuttgart.de>
Source record: 116108

>I am helping a high school student - KC4ROW - do some work with various
>"fruit" and "vegetable" batteries for a science fair project. We both
>feel that it would enhance the exhibit part of the project to have a
>Lemon Powered QSO.

Jim,

I have to dissapoint you in saying that there is not such a thing as lemmon
power. In the system you want to demonstrate the power comes from the
electrodes dissolving in the poor fruit, which is being abused as electro-
lyte.

Ever wondered why Nicads are not called potassium-hydroxides?

These "lemmon powered" demos only contribute to confusion
and should be dropped quietly.

Quite seriously, Moritz

2921. Hummerland 600 receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 18:01:46 UTC
From: "Colin Schmutter"
Message-ID: <37ejua$9dc@chopin.bcit.bc.ca>
Source record: 116109

[No readable article body recovered]

2922. Hummerland SP 600 mod

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 18:03:40 UTC
From: "Colin Schmutter"
Message-ID: <37ek1s$9de@chopin.bcit.bc.ca>
Source record: 116110

I have a Hummerland SP 600 receiver that I wish to add a product detector to.

I would prefer not to use solid state devices or IC's to keep the receiver all tube.

If anyone has done such a mod or has suggestions please EMAIL me at CSCHMUTTER@BCIT.BC.CA

2923. Re: Using a 74HC4046 be used for an LO in a receiver?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 18:08:48 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <37ekbg$2e20@info2.rus.uni-stuttgart.de>
Source record: 116111

About 10 years ago in a UK magazine there was a VFO based on a
VCO (for any amateur band) and a crystal oscillator about 500 kc
off the desired band. The frequency difference was phase locked
to a vfo tuned by a 500 pf max variable capacitor around 500 kc.

73, Moritz DL5UH

2924. Re: INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 19:13:47 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CxIw30.44n@srgenprp.sr.hp.com>
Source record: 116112

Ranson J. Pelt (pelt@vt.edu) wrote:
: QST

: Can anyone give me some advice on a good piece of equipment for measuring
: inductances. I have an LCR meter (LCR 195) which I purchased from Alpha
: Elec. several years ago. This meter works great for measuring capacitance
: but just doesn't get it for measuring small inductances (uh range).

I'm surprised nobody has mentioned the trusty old dip meter method.
A (grid) dip meter is an oscillator with an exposed oscillator coil.
When you bring the coil close to the inductor of a tuned circuit,
the meter "dips" when the tuned circuit is tuned to the frequency
of the dip oscillator. (Or the oscillator is tuned to the frequency
of the tuned circuit.)

To measure a small inductance, connect it in parallel with a known
capacitance to form a tuned circuit. Measure the resonant frequency
with the dip meter and apply the formula:

L = 1 / [C (2 PI F)^2]

Where L is inductance (H), C is capacitance (F), PI = 3.14159, and
F is frequency (Hz). The formula also holds for uH, uF and MHz.

The neat thing about this method is that you can mount the coil in
the actual circuit, so stray capacitance and lead inductance are
all accounted for.

AL N1AL

2925. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 19:16:39 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CxIw7r.48u@srgenprp.sr.hp.com>
Source record: 115972

Magoon Steve (magoo871@raven.csrv.uidaho.edu) wrote:
: Help! Anyone know where I can get an RF switch suitable for PC mount and
: controllable by TTL? Power need is low, max +20dbm, but it needs to have
: *good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
: aren't acceptable because they have bleed thru. Sure appreciate any
: advice. What do the hi-bandwidth o-scope manufacturers use?

With some care, I think you can get reed relays to work up to 500 MHz.

AL N1AL

2926. Re: Wanted: High Voltage tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 20:59:01 UTC
From: tgm@netcom.com
Message-ID: <tgmCxJ0yE.8AF@netcom.com>
Source record: 116114

Forrest T Charnock (charnoft@wfu.edu) wrote:
: I'm looking for some tubes (preferably triodes, but not necessarilly)
: that can handle from 10 to 25 kV. If you have any thoughts, please send me a
: note.
: Thanks!

You can find some nice high-voltage diode tubes in the flyback circuit
of an old color TV ... drive around your neighborhood on garbage day
looking for old console TVs.

--

2927. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 21:08:07 UTC
From: jimn0oct@aol.com
Message-ID: <37eurn$36c@newsbf01.news.aol.com>
Source record: 116113

In article <37ejpf$iqi@info2.rus.uni-stuttgart.de>,
moritz@ipers1.e-technik.uni-stuttgart.de () writes:

>>I am helping a high school student - KC4ROW - do some work with various
>>"fruit" and "vegetable" batteries for a science fair project. We both
>>feel that it would enhance the exhibit part of the project to have a
>>Lemon Powered QSO.

>Jim,

>I have to dissapoint you in saying that there is not such a thing as
lemmon
>power. In the system you want to demonstrate the power comes from the
>electrodes dissolving in the poor fruit, which is being abused as
electro-
>lyte.

>Ever wondered why Nicads are not called potassium-hydroxides?

>These "lemmon powered" demos only contribute to confusion
>and should be dropped quietly.

>Quite seriously, Moritz

If indeed you are quite serious, then I have to disagree with you. As
long as an understandable electrochemical explanation is given for *why*
the lemons and electrodes work, I don't see anything wrong with a demo of
this type.

Just my USD0.02

73, jim n0oct

2928. heathkit phone numbers:POSTED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-11 22:04:37 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <CxJ3zp.4rt@rahul.net>
Source record: 115974

i recently posted an article asking for phone numbers and such and i got one e-mail with the answer. i also got a request to post them if i got them well here they are,

Heath Company
455 Riverview Drive
Benton Harbor, MI 49022
Phone numbers -
(616) 925-6000 Main number
925-5899 Parts
925-3273 Repair
925-4914 Technical Assistance
800-253-0570 Order Department
800-444-3284 Catalog request

--
Mike Lyon <mlyon@rahul.net>

2929. Re: Lead-Acid Charger

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 01:13:24 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-111094171324@tomkreyche.zdlabs.ziff.com>
Source record: 116117

In article <371ejt$8c5@snoopy.jh.org>, ss@JH.Org (Steve Steinberg) wrote:

> I want to build a battery charger for deep-cycle (marine) batteries......

I called Unitrode at 603-424-2410 and received a copy of their "Product and Applications Handbook 1993-1994." Besides the product infomation on their "Sealed Lead-Acid Battery Charger" chip there is an extensive app note "Improved Charging Methods for Lead-Acid Batteries Using the UC3906." These two docs tell more than you'll need to know about the subject. The UC3906 is the chip used in the charger circuit in the 1994 ARRL handbook.

-tk

2930. Re lemon QSO]

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 02:31:33 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct11.223133.18744@wb3ffv.wb3ffv.ampr.org>
Source record: 115969

"Quite seriously", I would not want to discourage experimentation and learning and inquisitiveness. Go ahead with the lemon powered QSOs! (But be prepared for flames from the Fruits Rights crowd; it's inevitable; citrus abuse is a horribly under-reported crime, but public awareness is growing.) 73 de WA8MCQ (who doesn't power rigs with cute power sources, but does build them into very tiny, cute little enclosures and has a tremendous amount of fun doing it, and pays no attention to those who say it's foolishness because they're not practical)

2931. Re: coffee-can notch filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 05:58:21 UTC
From: wrt@eskimo.com
Message-ID: <CxJpt7.E2y@eskimo.com>
Source record: 115981

In article <1994Oct5.120952.5557@qatrix.lonestar.org>,
ken brookner <kenb@qatrix.lonestar.org> wrote:
>some time ago i ran across an article on the construction of coffee-can
>notch filters. i can't remember where, unfortunately. i've got an
>application where something like this would be quite helpful now and am
>trying to locate the information.
>
>if anyone can point me to a reference, or provide me with some design
and
>construction details, i'd be very appreciative.
>
>thanks! please post here or reply to kenb@metronet.com.
>
>ken brookner, n5lpi
>kenb@metronet.com
>kenb@qatrix.lonestar.org
>

The coffee-can type filters work pretty well for receiving, but they're too lossy to use for transmitting. A friend of mine brought a six meter version into work the other day and we hooked it up to a $30k HP impedance analyzer just to see what it was REALLY doing. It had a nice sharp peak at 50 MHz just as advertised, but you should have seen the look on his face when he realized it had a 3db insertion loss. This means that half the power through it was lost as heat. Good thing he wasn't running a KW - would have kept the room nice and warm!

The problem of course is that there is a very large amount of circulating tank current in the device. Had it been silver-plated, it probably would have been ok. If you still want to try one for six meters, email me and I'll get you the dimensions. For other bands you could scale it up or down, but at higher freqs, the loss will be even higher due to increasd skin effect.

73, W7LZP

2932. Re: INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 06:09:27 UTC
From: wrt@eskimo.com
Message-ID: <CxJqBo.F85@eskimo.com>
Source record: 115983

In article <pelt-0710941337220001@box185.ams.vt.edu>,
Ranson J. Pelt <pelt@vt.edu> wrote:
>QST
>
>Can anyone give me some advice on a good piece of equipment for
measuring
>inductances. I have an LCR meter (LCR 195) which I purchased from
Alpha
>Elec. several years ago. This meter works great for measuring
capacitance
>but just doesn't get it for measuring small inductances (uh range).
>
>Tnx for the help.
>
>de nz4i Randy
>
>--
>Ranson Pelt
>pelt@vt.edu
>QST de nz4i

For inductances in the range of .1 to 300 uHy, an old Tektronix model
130 is hard to beat, but also hard to find. They have been out of
production for years, but they show up from time to time. I finally
found one last year at a hamfest for $40 in perfect working order.
Would've paid two or three times that much if I had to. Great 'ol
timer.

73, W7LZP

2933. Re: Biasing tetrode tube - affects gain?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 06:24:26 UTC
From: wrt@eskimo.com
Message-ID: <CxJr0n.GC4@eskimo.com>
Source record: 115982

In article <dgfCxC3Ft.Gs2@netcom.com>, David Feldman <dgf@netcom.com>
wrote:
>I'm slowly progressing on a passive grid driven 4-1000 amp. I can
either
>bias it as a regular tetrode per eimac specs (some screen voltage and
>some grid voltage as appropriate), or bias it as if it were going to
>be run like a grounded grid triode (ground the screen, DC ground the
>control grid, and AC ground the cathode, with a few volts of zener
>bias in the cathode DC path as would be done for grounded grid).
>
>Anyway, it seems like it would be much simpler to use the grounded-
>grid style biasing (remember, the tube would still be grid driven, so
>it is _not_ a regular grounded grid circuit).
>
>Would these two approaches yield different gain in the amplifier, all
>other things (AC circuit parameters) being equal? I want to take the
>passive grid driven approach to (1) avoid the tuned input needed for
>a grounded grid amp, and (2) reduce drive requirements to about 50W
>for full output.
>
>Thanks for any insights!
>
>73 Dave WB0GAZ dgf@netcom.com
>

Well, I see one major problem. Any tetrode is not going to conduct much
if at all until there is the proper voltage difference (usually several
hundred volts) between the screen and the cathode. If the screen is
grounded, then the cathode must be several hundred volts negative with
respect to ground. This is what happens when you connect a tetrode in
"grounded grid" (both grids grounded) and drive the cathode. If you
connect the screen to ground, control grid to DC ground, put a few volts
bias on the cathode and then try to drive the control grid, you're
probably going to ruin the control grid. You just won't be able to
drive it hard enough without the screen-cathode differential voltage.
All that will happen is that control grid current will flow and that's
it - little or no plate current because of the missing screen. Make
sense?

73, W7LZP

2934. ** FLEA at MIT ** Sunday 16 October Cambridge MA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 07:09:00 UTC
From: w1gsl@ATHENA.MIT.EDU
Message-ID: <37g22c$k0i@senator-bedfellow.MIT.EDU>
Source record: 115984
Cross-posted to: rec.radio.swap,rec.radio.amateur.misc,rec.radio.info,sci.electronics,ne.forsale,ne.general,misc.forsale.computers.d,rec.radio.amateur.homebrew

This comming Sunday.. The Last one of the season....

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****
Steve Finberg W1GSL w1gsl@mit.edu
PO Box 82 MIT Br Cambridge MA 02139-7082 617 258 3754
****

2935. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 08:52:35 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <37g84j$1tkh@info2.rus.uni-stuttgart.de>
Source record: 115992

>As long as an understandable electrochemical explanation is given for *why*
>the lemons and electrodes work, I don't see anything wrong with a demo of
>this type.

You are missing my point here. If somoene put a piece of zinc and a piece
of copper into a glass of water and showed the effect of adding some
salt it would be much more instructive.

It is the phrase "lemmon power" itself that is the gimmik.

73, Moritz DL5UH

2936. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 12:42:51 UTC
From: clarke@acme.ist.ucf.edu
Message-ID: <37glkb$hgc@pegasus.cc.ucf.edu>
Source record: 115968

In article <37ejpf$iqi@info2.rus.uni-stuttgart.de>
moritz@ipers1.e-technik.uni-stuttgart.de () writes:

> I have to dissapoint you in saying that there is not such a thing as lemmon
> power. In the system you want to demonstrate the power comes from the
> electrodes dissolving in the poor fruit, which is being abused as electro-
> lyte.

> Ever wondered why Nicads are not called potassium-hydroxides?

> These "lemmon powered" demos only contribute to confusion
> and should be dropped quietly.

Apparently non-metals are getting a bad rap in the battery world.

For the sake of political correctness, perhaps we should rename
NiCads: transition metal/alkaline hydroxide power units,
dry cells: transition metal/alkaline chloride power units,
lead acid: heavy metal/inorganic acid power units, and ...
lemon power: transition metal/organic acid power units.

Tom Clarke

2937. Re: coffee-can notch filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 13:31:06 UTC
From: zlau@arrl.org
Message-ID: <1994Oct12.133106.31404@arrl.org>
Source record: 115970

Bill Turner W7LZP (wrt@eskimo.com) wrote:
:
: The coffee-can type filters work pretty well for receiving, but they're
: too lossy to use for transmitting. A friend of mine brought a six meter
: version into work the other day and we hooked it up to a $30k HP
: impedance analyzer just to see what it was REALLY doing. It had a nice
: sharp peak at 50 MHz just as advertised, but you should have seen the
: look on his face when he realized it had a 3db insertion loss. This
: means that half the power through it was lost as heat. Good thing he
: wasn't running a KW - would have kept the room nice and warm!

The loss for a given filter topology is a function of the ratio between
the unloaded and loaded Qs. Thus, you can reduce the loss to acceptable
levels by increasing the bandwidth of a bandpass filter (I assume by a
"sharp peak" you are talking about a BPF). This is why inductor/capacitor
input circuits can sometimes do as well as expensive cavity input circuits
on preamps--sometimes you can lower the loaded Q enough to compensate for
the lossier parts while still getting the required impedance transformation.

: The problem of course is that there is a very large amount of
: circulating tank current in the device. Had it been silver-plated, it
: probably would have been ok. If you still want to try one for six
: meters, email me and I'll get you the dimensions. For other bands you
: could scale it up or down, but at higher freqs, the loss will be even
: higher due to increasd skin effect.

Silver plating tends to be over-rated. To reduce the loss from 3 dB to
1 dB (still a lot of heat at the kW level), you would have to improve
the unloaded Q by by a factor of 2.7. I doubt that silver plating would
improve a tin plated can that much. My guess is that you would be
lucky to get a 20% improvement in Q. Of course, silver plated cavities
look a lot nicer than unplated copper ones--a big factor if you are
trying so *sell* something.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

2938. Tube/Valve Amp parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 13:36:11 UTC
From: asj@dsbc.icl.co.uk
Message-ID: <CxKB4C.F2s@dsbc.icl.co.uk>
Source record: 115996

Hi

The following was previously posted to rec.music.makers.guitar.

I am in the process of performing a service on my mid 60's Fender Princeton guitar amplifier.

I have been having trouble locating sources for the valves [tubes] & high value (450V) electrolytic capacitors. Can anyone recommend places to get these parts, prefereably in the UK? I have got the parts I need on order, but with hindsight I should have spent a bit more time calling around. I'll be using new Fender valves - I wont admit to how much these things have cost me .... I was in hurry ....

I dont read this newsgroup, so any email responses gratefully received. I'll collate & repost any pertinent information.

Regards, Adrian
asj@dsbc.icl.co.uk

2939. Amateur Radio Equipment

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 16:41:52 UTC
From: u3611506@abac.au.ac.th
Message-ID: <37h3ku$ocv@bsd.au.ac.th>
Source record: 115987

I'm looking for a 1kw 144MHz linear amplifier. Anyone has an information
on this, please send to me through email or direct to my address below.

--
-= Jade V. Thaveekij HS1ZEB N3JTV =- -= EMail: u3611506@abac.au.ac.th =-

2940. help with 12v supply regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 18:21:50 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <37h9fu$3kpl@yuma.ACNS.ColoState.EDU>
Source record: 115977

Hello I am building a 12v regulated power supply but i need help
regulating it! I don't know wich transistor's to use or exactly
how they should go. The transformer is a 12 amp non center tap.
could someone please mail about what the suitable transistors would
be and how to controll them!
Thanks a bunch
Robert

2941. pin diode attenuators & AGC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 20:14:37 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <37hg3d$4n6@bmerha64.bnr.ca>
Source record: 115971

Does anyone have any suggestions on building pin diode
attentuators @ 9 MHz. My interest is in building an
IF stage with pin diode attenuators for AGC and I have been
thinking about using the MAR or MAV series of amplifiers for
the amplifier chain. I know that this might be over kill when
you could use MC1350's or dual gate mosfets but the MC1350's are
only rated 0 - 70 deg C and dual gate mosfets seem to be extremely
hard to obtain and once a source is found relatively expensive.

What else is done for IF amps and AGC?
(I also know about the Plessey series of devices - they too are not cheap
Does anyone know of a source for Plessay in the states that is willing
to supply in the usual small quantities)

Bill Kirkland

p.s. I am presently playing around with the high performance AGC circuit
described in Solid State Design for the Radio Amateur and in
countless ARRL handbooks that uses the now unattainable Motorola I.C.
modified for the MC1350.

2942. Re: Fractional turns on toroids?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 23:33:10 UTC
From: dermer@ssd.intel.com
Message-ID: <CxL2rA.Ct3@SSD.intel.com>
Source record: 115973

In article <CxFFnv.HCH@srgenprp.sr.hp.com>, alanb@hpnmarb.sr.hp.com (Alan Bloom) writes:
...
|> fractional turns for the main windings. I agree that it is not possible
|> to achieve a fractional turn: So long as the two wire ends are connected
|> through the rest of the circuit, the turn is effectively completed anyway.
|>
...

Off the subject slightly, but you CAN get fractional turns. Though theoretically possible at any frequency, it's practically limited to frequencies where laminated or tape-wound cores are used. Drill a hole through the core and run one turn through it so that that turn only links part of the flux in the core. Voila, a partial turn.

It's a real drag trying to drill a hole in ferrite, though. ;)

Yeah, it's kind of lame.

Greg

dermer@ssd.intel.com

2943. Re: help with 12v supply regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-12 23:56:58 UTC
From: chrisw@bnr.ca
Message-ID: <1994Oct12.235658.12552@bnr.ca>
Source record: 115975

In article <37h9fu$3kpl@yuma.ACNS.ColoState.EDU>,
Robert Taylor <greendot@lamar.ColoState.EDU> wrote:
> Hello I am building a 12v regulated power supply but i need help
> regulating it! I don't know wich transistor's to use or exactly
> how they should go. The transformer is a 12 amp non center tap.
> could someone please mail about what the suitable transistors would
> be and how to controll them!
> Thanks a bunch
> Robert
>

The simple and obvious answer is: just use a 7812. This is a 3-terminal regulator chip. But, given the voltage of your transformer further analysis is needed. A 7812 requires about 2 volts or more across it to work properly. There are low dropout regulators that require .6 to 1 volt across them (unfortunately I don't know what's available). The voltage drop across the rectifiers can be reduced by using Schottky diodes instead of silicon diodes.

Measure the open circuit voltage of the transformer secondary. Put rated load on the secondary (use power resistors and/or lamps) and measure the voltage. Post the results as well as the maximum current you want to draw. I or someone else will then be able to tell if it is possible for you to get what you want with the transformer you have and how best to get it.

While it is possible to design and build a discrete voltage regulator circuit it is so much easier to use a chip.
--
Chris Witkowski | Bitnet: chrisw@bnr.ca | Phone: (613) 832-0135
BNR Ltd. | UUCP: uunet!bnrgate!bcars288!chrisw | FAX: (613) 763-2626
Standard disclaimer applies.

2944. Re: Cordless Phone Reciever?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 01:30:05 UTC
From: embera@bcfreenet.seflin.lib.fl.us
Message-ID: <37i2it$995@bcfreenet.seflin.lib.fl.us>
Source record: 115997

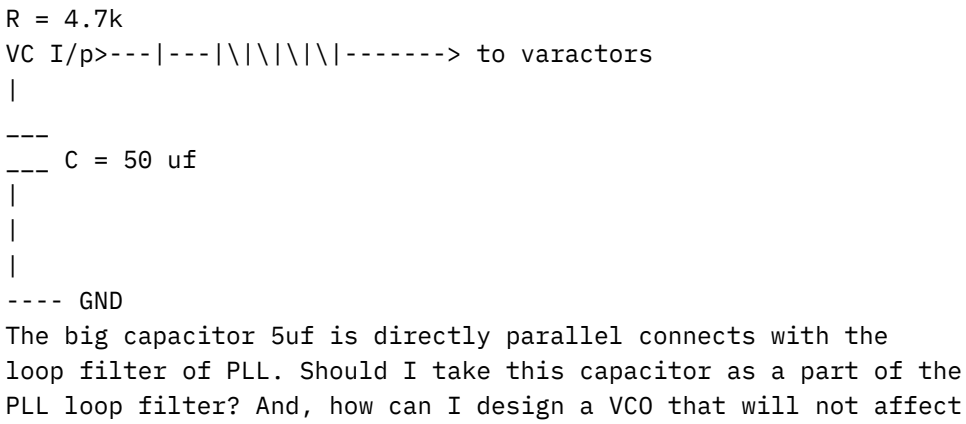
There are some excellent ones in the 1989 Motorola
"TELECOMMUNICATIONS" data book starting on page 2-44 using their MC3362
Low Power Dual Conversion FM Receiver chip. It was made specifically
for that purpose. You can also use their MC3363 chip, which includes a
RF Amplifier stage. They are beautiful and easy to work with.
John Fleming
(fleming@mcs.com) wrote:
: Does anyone know where there might be a schematic/parts list, or article,
: about building a receiver for standard (non-digital) cordless phone
: transmissions? I think they're somewhere in the 49 Mhz range, identified by
: 1-10 channels. Anyone Help?
: Thanks,
: John Fleming, N9NDH
: --
: "May your Sandcastles | John Fleming |
: as big as the beach" | johnflem@mcs.com |
: | "opinions are free, advice will cost you"|
: ==
--

J. Robert Runyon
embera@bcfreenet.seflin.lib.fl.us

2945. How to design VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 07:48:00 UTC
From: fredkuo@PROBLEM_WITH_INEWS_DOMAIN_FILE
Message-ID: <37iong$5uc@news.csie.nctu.edu.tw>
Source record: 115976

I have a question on VCO design : the resistor and
capacitor of voltage control input, normally for filtering
out the noise ,seems to change the PLL characteristics.
for example, a vc input as follows



The big capacitor 5uf is directly parallel connects with the
loop filter of PLL. Should I take this capacitor as a part of the
PLL loop filter? And, how can I design a VCO that will not affect
the PLL performance ?

fred Kuo | BV3DH
PO BOX 9-99, Hsinchu, Taiwan

2946. Atlas 350XL needs CD3495 transistor. Help.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 10:11:25 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Oct13.181125.1@ntuvax.ntu.ac.sg>
Source record: 115921
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hi,

A friend is repairing an Atlas 350XL transceiver and can't
seem to locate a CD3495 RF transistor in the output stage. Does
anyone know where to obtain this part, or to get a substitute? What
are the specs of this transistor? Thanks.

73,
RSM

2947. Identifying toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 10:49:25 UTC
From: mike@io.org
Message-ID: <37j3bl$6ks@ionews.io.org>
Source record: 116001

I have a grey toroid marked 34 am 55206 - a2 +2, outside dia .75, inside dia 9/16".

From the ARRL handbook, it looks like it might be a T-80-3 ???

Are the color codes standard for toroids?

Is there a color code for ferrite toroid mix types?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

2948. balun construction

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 14:40:02 UTC
From: jms@col.hp.com
Message-ID: <37jgs2$kbl@hp-col.col.hp.com>
Source record: 115979

I want to construct a balun, for a receiver, 50 ohms unbalanced
to 200 ohms balanced, covering the frequency range of .5 to 33 MHz.
All the toroid cores I've found (Amidon) don't seem to cover that
wide of a frequency range. Does anyone have any ideas how to go
about such a task? Should I just select the closest toroid core
and accept the losses when I use it out of it's frequency range?

Any suggestion and help are appreciated.

Mike, K0TER

2949. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 14:48:36 UTC
From: jorden@bianca.amd.com
Message-ID: <CxM951.JLK@txnews.amd.com>
Source record: 115991

In article <CxIw7r.48u@srgenprp.sr.hp.com>,
Alan Bloom <alanb@hpnmarb.sr.hp.com> wrote:
>Magoon Steve (magoo871@raven.csrv.uidaho.edu) wrote:
>: Help! Anyone know where I can get an RF switch suitable for PC mount and
>: controllable by TTL? Power need is low, max +20dbm, but it needs to have
>: *good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
>: aren't acceptable because they have bleed thru. Sure appreciate any
>: advice. What do the hi-bandwidth o-scope manufacturers use?
>
>With some care, I think you can get reed relays to work up to 500 MHz.
>
>AL N1AL
>

greetings,

I regularly use Teledyne brand T0-5 sized relays, DPDT.
These are small PC mount relays, that are characterized
to 1GHz. Certain varieties are TTL interface compatible.
They are fairly easy to use, and cost about $20 each.
Body size is T0-5 (dimensions approx. .370" x .275" for
case).

I use these relays for applications other than what would
be termed "RF", but they are pretty good relays in my
humble opinion. Manufacturer claims they are excellent
for RF applications.

-pat jorden, (these are my opinions, and not necessarily
those of my employer...etc. etc.)

pat.jorden@amd.com

2950. Re: Address to MOUSER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 15:17:27 UTC
From: serafin@spdc.ti.com
Message-ID: <CxMAH4.95n@spdc.ti.com>
Source record: 115985

aw@kthbib.lib.kth.se wrote:
: I plan to build the NorCal 40 QRP-trcvr, and I understand that
: most parts are to be find at MOUSER. Can anybody supply me with
: the post address to MOUSER, and e-mail as well if any.

This is out of the Dallas Yellow pages, I don't have the zip, but the phone is listed so you can call for the proper mailing address

Mouser Electronics
2401 Hwy 287 N
Mansfield, TX

800-346-6873

Mike
KC5GRW

2951. Re: Search for Homebrew SW Receiver Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 15:19:54 UTC
From: chasr@parc.demon.co.uk
Message-ID: <782061594snz@parc.demon.co.uk>
Source record: 115994

In article <w4qo.781722935@atl1>
w4qo@peach.america.net "James C. Stafford" writes:

> asmith@utkvx.utk.edu (A.L. Smith) writes:
>
> >Does anyone know of FTP or other source of plans for building a simple
> >SW Receiver?
> >Thanks,
> >asmith@utkvx.utk.edu
> TenTec has a regenerative sw kit for about 17 bux. I have it but have
> not built it yet. It includes a nice little front panel. Let me know if
> you do not know what TenTec is.
>
Hi All,
Believe it or not this is my first contact on newsnet.
Rather like a first contact on air :-))
Anyway here goes.
I know what Tentec is - I have a Corsair II, but I'm very interested in the
sw receiver kit you mentioned. Would appreciate you posting the info so that
I can place an order from the UK.
--
charles rodgers g7oyn
chasr@parc.demon.co.uk

2952. Re: Where can I mailorder parts on the Internet?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 15:36:48 UTC
From: chasr@parc.demon.co.uk
Message-ID: <782062608snz@parc.demon.co.uk>
Source record: 115995

In article <374mtj$kcp@nova.np.ac.sg> s2202629@np.ac.sg "Teh Aik Wen" writes:

> I'd like to know if there's anywhere on the net I can mailorder for
> stuffs in the Radio Shack or Maplin catalog or any other major electronics
> companies (Are they called that?)
>
> I'd like to pickup a couple of stuffs, and would want to find out how
> much it'd cost me and the things like that first, and if nothing else,
> it'd save on time & postage sending it _there_ in the first place.
>
Teh, If you have the Maplin catalogue then you will find that you can mail order by modem with amex or visa. Maplin deal with overseas mail orders so they should accept your order by Cashtel (Computer Aided SHopping by TELephone). If you need more info then let me know. Not exactly Internet but if you don't mind a long distance phone call then it may be a way of getting what you want.
--
charles rodgers
chasr@parc.demon.co.uk

2953. Re: How to design VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 16:27:00 UTC
From: tomb@lsid.hp.com
Message-ID: <CxMDp1.1sE@hpcvsnz.cv.hp.com>
Source record: 115980

m330_fredkuo (fredkuo@PROBLEM_WITH_INEWS_DOMAIN_FILE) wrote:

: I have a question on VCO design : the resistor and
: capacitor of voltage control input, normally for filtering
: out the noise ,seems to change the PLL characteristics.
: for example, a vc input as follows

: R = 4.7k
: VC I/p>---|---|\|\|\|\|-------> to varactors
: |
: ___
: ___ C = 50 uf
: |
: |
: |
: ---- GND
: The big capacitor 5uf is directly parallel connects with the
: loop filter of PLL. Should I take this capacitor as a part of the
: PLL loop filter? And, how can I design a VCO that will not affect
: the PLL performance ?

Yes, the cap will be part of the filter. There really shouldn't be a need for it. About the only filtering you need at the varactor control input would be to take out RF (keep RF from getting back into the active elements feeding the control input), and a 5uF or 50uF (aluminum electrolytic or tantalum) isn't going to be a particularly good RF filter anyway.

As for that last question, it's a little like asking how to design a car with wheels that won't affect the performance. The VCO is an integral part of the loop, and its transfer function must be accounted for in evaluating the whole loop. Even if it's response is very fast, you must at least take into account its "gain": so many kHz/volt. And you better insure its response is fast enough that where it starts to roll off is above the unity-gain frequency around the loop if you want to even think about ignoring its frequency response characteristics.

2954. MOUSER'S ADDRESSES AND PHONE#'S

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 16:40:39 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Oct13.104039.1@ualr.edu>
Source record: 116002

TOLL FREE 800-346-6873

Northern CA WEST CENTRAL

M-F 5AM - 7PM (PST) SAME M-F 7AM-9PM (CST)

370 TOMKINS COURT 11433 WOODSIDE AVE. 2401 HIGHWAY 287 NORTH
GILROY, CA 95020-3631 SANTEE, CA 92071-4795 MANSFIELD, TX 76063-4827
PH. 408-842-5522 619-449-2222 817-483-4422
FAX -7375 -6041 -0931

EAST

M-F 8AM-10PM (EST)

12 EMERY AVE.
RANDOLPH, NJ 07869-1362
PH. 201-328-3322
FAX -7120

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--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail ldheiss@athena.ualr.edu
call: KC5CVL
****

2955. Re: RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 17:20:24 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <37jq8o$97c@tekadm1.cse.tek.com>
Source record: 115999

In article <37cr23$56s@owl.csrv.uidaho.edu> magoo871@raven.csrv.uidaho.edu (Magoon Steve) writes:
>Help! Anyone know where I can get an RF switch suitable for PC mount and
>controllable by TTL? Power need is low, max +20dbm, but it needs to have
>*good* bandwidth(>500 MHz) and off isolation. Mini-circuit switches
>aren't acceptable because they have bleed thru. Sure appreciate any
>advice. What do the hi-bandwidth o-scope manufacturers use?
>
>--
> Thanks, Steve Email: magoo871@uidaho.edu
> U of Idaho, Moscow, Idaho.

You can get greatly improved off-isolation performance and no degradation of on-resistance by using two diodes. Follow the series diode with a shunt diode. Turn one on when the other is off, and vice-versa.

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

2956. Re: How to design VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 17:21:53 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <37jqbh$mvb@chnews.intel.com>
Source record: 116003

In article <37iong$5uc@news.csie.nctu.edu.tw>,
m330_fredkuo <fredkuo@PROBLEM_WITH_INEWS_DOMAIN_FILE> wrote:
>
> I have a question on VCO design : the resistor and
>capacitor of voltage control input, normally for filtering
>out the noise ,seems to change the PLL characteristics.

Hi Fred, your 5 or 50 uF cap is probably an electrolytic and not good
at decoupling RF. Parallel that cap with a 0.1 uF ceramic. 4.7k seems
low for the resistor, I usually use 100k or an RF choke.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

2957. Re: Identifying toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 18:12:48 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <37jtb0$eog@tekadm1.cse.tek.com>
Source record: 116000

mike@io.org (Mike Stramba):

>I have a grey toroid marked 34 am 55206 - a2 +2, outside dia .75, inside
>dia 9/16".

>From the ARRL handbook, it looks like it might be a T-80-3 ???

>Are the color codes standard for toroids?

>Is there a color code for ferrite toroid mix types?

To my knowledge, there's no standard color coding for ferrites. Most are unpainted, so are the gray color of the ferrite itself. Others are painted. I've seen gray-painted cores which are ferrite and others which are low-frequency powdered iron. I'm assuming yours is painted, so I don't know of any way to determine what it is except by putting a small number of turns on the core and measuring its impedance at a number of frequencies. If you have one you can sacrifice, you can break it. (Wear safety glasses.) Ferrite breaks like glass, while powdered iron doesn't. If it's ferrite, you can get a general idea of the type by measuring the DC resistivity of the core. (High-freq. ferrites have high resistivity, low-freq. ferrites have relatively low resistivity.) All powdered-iron cores I'm familiar with look like insulators at DC.

The powdered-iron cores made by Micrometals (and sold by Amidon and others) do have a standard color code, but other cores may resemble them.

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

2958. Re: Kenwood TS680/140 Computer Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 18:18:21 UTC
From: duncanfj@eplrx7.es.duPont.com
Message-ID: <duncanfj.782072301@eplrx7.es.dupont.com>
Source record: 115990

hbrown@nadir.resd (Harry H. Brown) writes:

Call QSO Software

Call QSO Software at 1800 GUD DX 73 They have both an interface clone and
the software for IBM or Macintosh. 1800 483-3973.

>I've got a Kenwood TS680 transceiver that I would like to connect to a PC. My manual indicates that there is one but since this transceiver is no longer made, I'm looking for a used unit or a HB one. I'm also looking for MS DOS software for use with it. Does anyone have circuit info or know where I can find it (including control software)?

>73, Harry, W3IIT
>hbrown@resd.vf.ge.com

2959. Address to MOUSER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 19:35:26 UTC
From: aw@kthbib.lib.kth.se
Message-ID: <00985E38.82DCAEE0@kthbib.lib.kth.se>
Source record: 115978

I plan to build the NorCal 40 QRP-trcvr, and I understand that most parts are to be find at MOUSER. Can anybody supply me with the post address to MOUSER, and e-mail as well if any.

73 Anders SM0HPL

2960. Need info on Filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 19:51:26 UTC
From: falwine@vnet.ibm.com
Message-ID: <37k33u$ulr@watnews1.watson.ibm.com>
Source record: 115986

Posting for a friend:
Can anyone tell me the difference between "SFU" and "SFH" ceramic filters?

Also, does anyone know of sources for IF filters (10.7MHz IF) with bandwidths
in the 25KHz -> 100KHz range? (...or 455KHz IF?)

Thanks es 73, Frank N1GPY

Frank Alwine Internet: falwine@vnet.ibm.com
Technology Analysis IBM: falwine at btvmanvm
IBM Microelectronics falwine@ispy.btv.ibm.com
Burlington, Vermont Packet Radio: n1gpy@n1gpy.#nwvt.vt.usa

2961. Re: pin diode attenuators & AGC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 19:52:51 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CxMn85.IDM@srgenprp.sr.hp.com>
Source record: 115988

Bill Kirkland (kirkland@bgtys22.bnr.ca) wrote:
: Does anyone have any suggestions on building pin diode
: attentuators @ 9 MHz. My interest is in building an
: IF stage with pin diode attenuators for AGC and I have been
: thinking about using the MAR or MAV series of amplifiers for
: the amplifier chain. I know that this might be over kill when
: you could use MC1350's or dual gate mosfets but the MC1350's are
: only rated 0 - 70 deg C ...

0 to 70 deg C is 32 to 158 deg F. And the parts will work just fine
way below freezing, it's just that the specifications are not guaranteed.
For amateur applications, the temperature range is not an issue.

AL N1AL

2962. Re: balun construction

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 20:05:30 UTC
From: royle@tekgp4.cse.tek.com
Message-ID: <37k3ua$qsn@tekadm1.cse.tek.com>
Source record: 115989

jms@col.hp.com (Mike Stansberry):

>I want to construct a balun, for a receiver, 50 ohms unbalanced
>to 200 ohms balanced, covering the frequency range of .5 to 33 MHz.
>All the toroid cores I've found (Amidon) don't seem to cover that
>wide of a frequency range. Does anyone have any ideas how to go
>about such a task? Should I just select the closest toroid core
>and accept the losses when I use it out of it's frequency range?

The "frequency ranges" usually given for ferrites are ranges appropriate for using them as inductors. At the given ranges, inductor Q will be reasonable. Above the stated range, the impedance remains high but becomes resistive. Typical "low-frequency" ferrites exhibit a relatively constant impedance over several decades of frequency above the "recommended" range. This is not a problem, and in fact has advantages, for untuned transformers. In a properly designed transformer, the winding impedance is high and it's not important whether the impedance is resistive or reactive. Therefore, "low-frequency" ferrites are ideal for use as baluns and other untuned transformers. 70-series is best for the HF range, 43 best at 6 meters, and type 61 for higher frequencies. The exception is when very high power is involved. If the power level is 1 kW and the core loss is 5%, you have an insignificant attenuation of your signal but the core has to dissipate 50 watts of power. In this case, it would be better to use type 43 or even 61 at HF, but it'll be harder to achieve enough impedance, especially with type 61. (Type numbers are Fair-Rite Corp. designations. Other companies have equivalent types with different designations.)

73,
Roy Lewallen, W7EL
roy.lewallen@tek.com

2963. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-13 21:42:14 UTC
From: w4qo@peach.america.net
Message-ID: <w4qo.782084273@atl1>
Source record: 115993

Of course, I/we recognize that it is not the lemon that powers the radio. The whole idea of the project is to use different electrolytes and electrode materials to generate electricity. Also, the difference between a science fair project and pure research is that we try to have fun with science and also to make an eye catching display. That is why my ham radio student wants to conduct a radio transmission and reception using some "odd" batteries.

What I am looking for is a very low powered receiver circuit to match up with the transmitter from the original QST article that I mentioned. Any help appreciated.

73, Jim, W4QO

2964. Re: coffee-can notch filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 00:04:16 UTC
From: ghiscox@netcom.com
Message-ID: <ghiscoxCxMyv5.6zw@netcom.com>
Source record: 116011

ken brookner (kenb@qatrix.lonestar.org) wrote:
: some time ago i ran across an article on the construction of coffee-can
: notch filters. i can't remember where, unfortunately. i've got an
: application where something like this would be quite helpful now and am
: trying to locate the information.

You didn't mention what the application was. If yours is a transmit
application, have you considered using a tuned stub made from a
T-connector and an appropriate length of coax? What is it you're trying
to do?

George L. Hiscox	Very funny Scotty...Now
ghiscox@netcom.com	beam down my clothes!!!
WA6RIK @ WB6YMH.#soca.ca.usa.na	^^^^^^^^^^^^^^^^^^^^^^^^

2965. Re: help with 12v supply regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 03:01:32 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <37ksac$681@vixen.cso.uiuc.edu>
Source record: 116013

Chris Witkowski (chrisw@bnr.ca) wrote:
> In article <37h9fu$3kpl@yuma.ACNS.ColoState.EDU>,
> Robert Taylor <greendot@lamar.ColoState.EDU> wrote:
> > Hello I am building a 12v regulated power supply but i need help
> > regulating it! I don't know wich transistor's to use or exactly
> > how they should go. The transformer is a 12 amp non center tap.
> > could someone please mail about what the suitable transistors would
> > be and how to controll them!
> > Thanks a bunch
> > Robert
> >

> The simple and obvious answer is: just use a 7812. This is a 3-terminal
> regulator chip. But, given the voltage of your transformer further ana-
> lysis is needed. A 7812 requires about 2 volts or more across it to work
> properly. There are low dropout regulators that require .6 to 1 volt a-
> cross them (unfortunately I don't know what's available). The voltage
> drop across the rectifiers can be reduced by using Schottky diodes in-
> stead of silicon diodes.

> Measure the open circuit voltage of the transformer secondary. Put rated
> load on the secondary (use power resistors and/or lamps) and measure the
> voltage. Post the results as well as the maximum current you want to draw.
> I or someone else will then be able to tell if it is possible for you to
> get what you want with the transformer you have and how best to get it.

> While it is possible to design and build a discrete voltage regulator cir-
> cuit it is so much easier to use a chip.
> --
> ---
> Chris Witkowski | Bitnet: chrisw@bnr.ca | Phone: (613) 832-0135
> BNR Ltd. | UUCP: uunet!bnrgate!bcars288!chrisw | FAX: (613) 763-2626
> ---
> Standard disclaimer applies.

If I'm not mistaken, what Robert wants is to get about as much of regulated
juice out of his transformer (which is 12 A). And a 7812 cannot do this alone;
max current limit for that one is 1A. (By the way, this doesn't mean short-
circuit current, I think.) While I know there is a 5A version of 7812
(something like 78T12 or 78K12 - gotta go home and search my junkbox), not
sure if a 10A version is out there. (Yes, I've seen 10A version of 7805, but
there is a hugh difference between 10A X 5V = 50 W and 10A X 12V = 120W.)
Maybe that's why I haven't seen any commercial power supplys made of these
regulator ICs (besides the cost thing).
The number of pass transistors are decided by several factors:

1. Voltage drop across the transistor
2. maximum supply current
3. maximum junction (?) temperature of the transistors used
etc..
As a rule of thumb, one 2N3055 can handle about 5A of current when well heat-sinked for 17V in - 12V out regulator circuit. But then again, this also depends on the size of the heatsink (or, to be precize, thermal resistance of the heatsink).
The chapter on power supply from ARRL handbook will serve a good starting point, Robert; go to your library and see if there are any other books on power supplies (linear, switching, etc).
I am also working on a 12V 10A power supply myself. I wanted to use three 2N3055s for the project (better be safe than sorry), but alas, had only two heatsinks...

Han KB9BQO / HL1AMS
--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

2966. Suggestions for my power distribution system?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 03:30:17 UTC
From: finster@zeus.fasttax.com
Message-ID: <finster.345.2E9DFB49@zeus.fasttax.com>
Source record: 116015

I posted this to rec.radio.amateur.equipment and didn't get much response. After consideration, that may have been the wrong group, and this one appears more on target. My apologies if you've seen this over there and don't want to read it again. I understand I should have cross-posted it in the first place.

==========

I'm setting up a ham shack here in my apartment and I'm looking for suggestions. Currently I'm using (well, listening for now... still checking the mailbox every day for my ticket) a HTX-202 and an Icom 4AT for radios, along with a couple scanners. I have a two large (larger than car battery, about the size of semi-tractor battery) 12 volt gel-cell batteries and want to use them in my power system. (got 'em for free, might as well use em...) My current plan runs something like this:

Hook both gel-cells up in parallel, and trickle charge them from solar cells. Then run the output from the batteries up to a power distribution center (large project box) with a central amp and volt meter on the main line to monitor the battery state. I plan to have 4 or 5 outputs on the project box. The current plan is to use some Radio Shack "universal voltage adapters" to regulate the voltage on the output. I've found the cigarette lighter type at swap meets for a couple bucks each. That way I can switch the voltage between 3, 6, 9, and 12 volts at each output, and toggle the polarity by changing the end plug. I'm not sure how much current draw those adapters will stand, even though they are the "high-power" type, and are vented for cooling.

My thought was by using a system like this, I could kill any AC hum in the system. Also, I could easily stay on the air when the power goes out.

I do have a few questions:

The batteries have no markings at all. All I know is that they are 12 volt, they will take a charge when I charge them up with my 10 amp car battery charger, and they weigh a ton. (ok, about 75 or 80 pounds each.) Any ideas on what sort of current draw they will stand, and what sort of battery life I can expect? These were discarded from a UPS system because they reportedly "wouldn't take a full charge". After charging with my battery charger, they measure right at 12 volts on my dinky voltmeter, under no load.

If I can get a bank of solar cells together that would put out 12+ volts at a trickle charge (100 - 200 milliamp) will I hurt the battery by leaving it hooked up all the time?

Do I need diodes in-line with the solar cells to prevent the batteries from leaking voltage back through the solar cells?

Is my solar-cell idea just a fantasy?

Assuming my solar-cell idea is a fantasy, anyone have useful schematics for a trickle charger I can build pretty cheap?

I thought it would be useful to have the main volt and amp meters switchable so that I could monitor the main line for total current draw and voltage, or monitor each output alone. I think it would be too expensive (though impressive!) to have seperate meters for the main and all outputs. The problem I see is that switching the meters in and out of circuit would disrupt power to the outputs while switching. Any suggestions to solve this problem?

I plan to place fuses inline with each output. Any suggestions on type of fuses, or are there small circuit breakers that would do the job properly?

Any hidden grounding problems with the above setup that might bite me? I'm currently running from a homemade folded dipole, and a 5/8 wave mag-mount antenna, so the whole setup is floating with no earth ground at all. Should I be concerned with it?

I know someone out there must have a similar setup. Any comments or hindsight observations? I apologise in advance if these seem to be trivial questions and a waste of bandwidth. But then, at least I'm not bitching about for-sale ads and such... :-) I'm not an EE but I'm pretty handy with a soldering iron, at least when dealing with digital systems. I'm learning and reading as much as possible about analog and RF stuff, but I haven't seen this topic covered in the books I have. I've never built a power system before, so any feedback or pointers to other good books would be helpful. I'd far rather buy books and parts and build it myself, even if it ends up costing the same as an "off-the-shelf" system. At least I end up learning something in the process, and know how to fix it when it breaks.

-- Dave
finster@fasttax.com

2967. How to design VCO?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 06:36:32 UTC
From: fredkuo@PROBLEM_WITH_INEWS_DOMAIN_FILE
Message-ID: <37l8tg$nf4@news.csie.nctu.edu.tw>
Source record: 115998

[No readable article body recovered]

2968. Re: help with 12v supply regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 11:15:00 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <37lp7k$1hal@info2.rus.uni-stuttgart.de>
Source record: 116014

>If I'm not mistaken, what Robert wants is to get about as much of regulated
>juice out of his transformer (which is 12 A). And a 7812 cannot do this alone;
>max current limit for that one is 1A.

A friend of mine suggested the following "quick and dirty" method,
which was used in the company he works:

Use the required number of 7812 in parallel, each fused with just
over 1 Amp. (in this case 12).
How it works? they have the 1 Amp current limit, and when one (the one
with the lowest output voltage) gives 1 Amp, the next one taks over
and so forth. If one fails shortcircuit it will blow its fuse, when you
have a Zener paralell with the output. This is a great advantage over
the 2x 2N3055 method. BTW, There are nowdays transistors about as
cheap as the 3055, (2N3772?) but much better.

Any suggestions?Moritz DL5UH

2969. Re: Homebrew Antennas for cordless phones

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 16:19:41 UTC
From: chuck@platinum.com
Message-ID: <chuck.1.00115478@platinum.com>
Source record: 115929

In article <laforest.snowcrest.net-0710940056230001@ppp0.mtshasta.snowcrest.net>
laforest.snowcrest.net (Dale LaForest) writes:
>From: laforest.snowcrest.net (Dale LaForest)
>Subject: Re: Homebrew Antennas for cordless phones
>Date: 7 Oct 1994 07:59:54 GMT

>Does anyone know if the range of cordless phones can be extended by adding
>a long wire to the end of the antenna?

>This digitial cordless phone uses 900 mhertz frequency... and should the
>antenna be any particular length to optimize its effectiveness?

>I'm wondering because I heard that digital cordless phones might have up
>to 4 times the range of standard cordless phones...(700' max), ... so I'm
>wondering if a 1/2 mile range is possible?

>thanks

>Dale LaForest
>e:mail at

>laforest@snowcrest.net
>(916)926-5115

2970. RF Switches Anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 17:15:47 UTC
From: kevinpu@atm.COM
Message-ID: <9410141711.AA20479@atm.com>
Source record: 116005

I posted this to the QRP list but didn't get a response:

In the NEQRP club 40/40 circuit NN1G used a diode bridge (which looks
biased in the middle power rail and ground) for QSK switching.

This circuit doesn't have any LC so its is wide band.

However I have not figured out its mode of operation. I presume it use the
RF from the TX to switch the diodes off on TX whereas the DC bias turns
them on on RX. The TX port is connected to the TX PA and the antenna.

Anyone care to clarify this one for me?

The "V" is a diode with + end (anode) down

```
12 volts
|
R about 1k
|
----------
| |
T V V
X | |
--||-- + +--------||----- to RX
| |
V V
| |
----------
|
R about 1K
|
gnd
```

After a weekend and some though I came up with the following explaination:

Marking up the DC voltages on this circuit:

```
> 12 volts @ 5mA
> |
> R about 1k
> |
> 6.7v ---------- 6.7v
> | |
>T V V
>X | |
>--||-- + 6.0v +--------||----- to RX
> | |
```

> V V
> | |
> 5.3v ---------- 5.3v
> |
> R about 1K
> |
> gnd

All diodes are biased on with about 2.6mA flowing through each diode.

So it seems that when the TX voltage rises to exceed plus or minus 0.6V alternate sets of diodes (A and B) are turned off, the remaining diodes are biased on.

In the above example if the input RF voltage exceeds 0.6V the diodes A are turned off and the diodes B remain in. The RX is prevented from seeing the TX RF power and the

In the quiescent state all the diodes are biased on and so signal can get through to the RX (with not too much power being wasted if the RX impedence is << 1k (the resitance of the bias supply).

Am I on the right track?

Does this circuit have advantages over the conventional back to back diodes (over and above the its lack of a tuned circuit)? Does it have better isolation? Better IMD performance.

73

Kevin Purcell Attachmate Corp kevinpu@atm.com 206/649-6489
Seattle dBug Mac Developers SIG organiser xenolith@halcyon.com N7WIM / G8UDP

2971. ICOM 751A

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 19:25:24 UTC
From: tahir@tcdsp1.mmm.com
Message-ID: <37mlv4$n8d@dawn.mmm.com>
Source record: 115935
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Hi all,
I've been told by ICOM that the 751A is no longer being manufactured. I need to purchase one or more of these sets. Does anyone know of a dealer who might still have some in stock?
Thanks.
--

2972. Re: Help with Plotter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 20:54:19 UTC
From: Michael@arkas.demon.co.uk
Message-ID: <782168059snz@arkas.demon.co.uk>
Source record: 115939

In article <m0quPqi-000EmEC@rogue.com> dshalita@rogue.COM "David Shalita" writes:

> I was recently given an old HP-7475A Pen Plotter, to use, if
> I could, for small homebrew printed circuit boards. This plotter
> has an HP-IB interface and my PADS shareware IBM PC386 can only
> drive plotters thru the RS-232C serial port. This plotter was on
> an old Commodore Business Computer System.
>
> I'm looking for any low cost solutions to my problem. Any suggestions?
> I don't know if a used IEEE-488 card in my PC386 would solve anything?
>
> Can't put a lot of money into this unit. I need to know if I have:
> 1. A working PLotter.
> Yes it does complete the self test image.
> 2. My software(s) can really produce artwork with it.

Your software must be able to output plot commands in the HPGL format. I once had the use of a HP plotter which had an RS-232 port - it still needed the HPGL commands, though. If your plot program has HP plotter drivers available, then you will probably be ok if you can find an RS-232/HP-IB converter to drive from your PC's serial port.

--
Mike Dower
G0VEY 'Quoth the raven, "Never more".' ... Poe
VK2ENG

2973. Gerry 49MHZ monitor w/intercomm

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 21:38:09 UTC
From: mgarrett@prairienet.org
Message-ID: <37mto1$7ln@vixen.cso.uiuc.edu>
Source record: 116004

I recently aquired a Gerry model 600 49MHZ Baby monitor with an intercom feature. I only have the transmitter and no reciever. The transmitter from what I can tell runs on 49.830 and listens in in 49.890 MHZ. It also has separate circuitry that looks like it belongs in a garage door opener. I can only guess that this is some sort of secondary reciever needed to make the intercom work.
I have in the past converted several 49 Mhz gear to the 6 meter ham band and was wondering if this might be a useful canadate for such a conversion as a low powered 6 meter repeater or such.
Is there anyone that is familiar with this unit and or has access to schematics out there that can give some advice on this unusual baby accessory?
--
Mark Garrett mgarrett@firefly.prairienet.org
KA9SZX @ N9LNQ.#ECIL.IL.USA.NA

2974. Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 21:45:59 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Oct14.214559.9971@ultb.isc.rit.edu>
Source record: 115930

I have a few projects in mind that use a MPF-102 for pre-amps on
2-meters and 440. Are there any newer parts that have better gain
or less noise? The Motorola RF Device book doesn't list substitutes
for the MPF102.

73...Jim N2VNO

2975. Re: Biasing tetrode tube - affects gain?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 22:38:05 UTC
From: ells22@aol.com
Message-ID: <37n18d$9qj@newsbf01.news.aol.com>
Source record: 115928

In article <dgfCxC3Ft.Gs2@netcom.com>, dgf@netcom.com (David Feldman)
writes:

Dave, I too am progressing on a passive grid driven 4-1000A Amp. I am
using screen voltage on it though to get sufficient gain to maek a
relatively evfficient amp on HF. Since the tube will be run AB1, I think I
will need about 5KV on the plate and 750 volts on the screen. I am
considering grounding the screen and running the entire tube "below"
ground to avoid the need for the infamous screen bypass Cap.

I am really interested in this subject of passive input circuity Amps and
will gladly share info with you as far as my technical knowlege goes. Gud
Luk!!!

Russ Ellsworth WA6CWV Boise, Idaho

2976. Powre supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-14 23:24:44 UTC
From: Peter.Lam@f125.n635.z3.fidonet.org
Message-ID: <222_9410170111@unique.pronet.com>
Source record: 115931

Hi,

could someone out there help me with a circuit diagram for a power supply.

I allready have a 17A, 18V transformer. All i need is a good circuit which
hopefully contains a crowbar.

If you can help please leave me a message.

I was supprised there are no files to be found anywhere on power supplies.

Cheers,
Pete (VK3LAM)
--
FidoNet: Peter Lam 3:635/125
Internet: Peter.Lam@f125.n635.z3.fidonet.org

2977. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 01:31:18 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <37nbd6$g5g@abyss.West.Sun.COM>
Source record: 115934

In article 9971@ultb.isc.rit.edu, jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
>
>I have a few projects in mind that use a MPF-102 for pre-amps on
>2-meters and 440. Are there any newer parts that have better gain
>or less noise? The Motorola RF Device book doesn't list substitutes
>for the MPF102.

I'd recommend the J308/309/310 family for 2m/70cm pre-amp use. A J310
is certainly superior to an MPF102 in these applications. However, you
may need to adjust the circuit to the different specs of the J310 (have
a look at the data sheets). A 2N4416 is essentially identical to an
MPF102, and may be easier to find.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

2978. Re: pin diode attenuators & AGC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 01:43:00 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <37nc34$g5g@abyss.West.Sun.COM>
Source record: 115933

In article 4n6@bmerha64.bnr.ca, kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:
>Does anyone have any suggestions on building pin diode
>attentuators @ 9 MHz. My interest is in building an
>IF stage with pin diode attenuators for AGC and I have been
>thinking about using the MAR or MAV series of amplifiers for
>the amplifier chain. I know that this might be over kill when
>you could use MC1350's or dual gate mosfets but the MC1350's are
>only rated 0 - 70 deg C and dual gate mosfets seem to be extremely
>hard to obtain and once a source is found relatively expensive.
>
>What else is done for IF amps and AGC?

Well, you could use discrete devices. A 2N5109, for example, can
make a very strong IF amplifier at 9MHz. A JFET, such as a J310,
is also a pretty good choice, not as strong as a 2N5109 but since
you're planning on running good AGC this probably doesn't matter.

The drawback to using a discrete device is primarily that you'll have to design
biasing and impedance matching circuitry. The MMIC parts (MAR/MAV/MSA) are
very appealing in that they are already biased and matched. The return
loss performance at the input on most of the MMICs is quite good, you can
use it as termination for filters, but a discrete design may require a
little more work to accomplish the same thing.

A discrete design is likely to offer lower noise and higher gain, and
even may have a better output power (i.e. better dynamic range).

An overlooked idea is using one of the smaller RF power FETs as a strong
IF/AGC amplifier. They're pretty damn good on the noise figure, and offer
excellent dynamic range. I've never tried it, but even a VN10KM or somesuch
might make a good 9MHz IF amplifier.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

2979. Re: help with 12v supply regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 05:46:12 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <37nqb4$t08@vixen.cso.uiuc.edu>
Source record: 115936

moritz@ipers1.e-technik.uni-stuttgart.de wrote:
> >If I'm not mistaken, what Robert wants is to get about as much of regulated
> >juice out of his transformer (which is 12 A). And a 7812 cannot do this alone;
> >max current limit for that one is 1A.

> A friend of mine suggested the following "quick and dirty" method,
> which was used in the company he works:

> Use the required number of 7812 in parallel, each fused with just
> over 1 Amp. (in this case 12).
> How it works? they have the 1 Amp current limit, and when one (the one
> with the lowest output voltage) gives 1 Amp, the next one taks over
> and so forth. If one fails shortcircuit it will blow its fuse, when you
> have a Zener paralell with the output. This is a great advantage over
> the 2x 2N3055 method. BTW, There are nowdays transistors about as
> cheap as the 3055, (2N3772?) but much better.

Actually I tried something like this but used a slightly different approach.
I put a balance resister (you know, 0.1 ohm or so) after each regulator
to combine their output - I just wanted to treat them equally. Works kinda
well, but I gave up that idea for other reasons; it's hard to adjust output
voltage and I wanted to add circuits like overvoltage crowbar and variable
current limit (foldback).
I'm sure the method you've illustrated here works and works OK, as long
as you don't have to change output voltage and simply rely on current
limiting by individual regulators. That'll make the circuit pretty simple
other than possibly increasing total parts count.
Also, thanks for the suggestion on new devices, Moritz.

Han..

> Any suggestions?Moritz DL5UH

--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

2980. Need info SFU455 filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 07:26:53 UTC
From: karen@ra3apw.ampr.demos.su
Message-ID: <AAzGudkCq8@ra3apw.ampr.demos.su>
Source record: 115941
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

Hi,
I am looking for info about SFU455 ceramic filters. I have some SFU455A and
SFU455B that I plan use, if it possible, in 9600/19200 designing packet rig.

It will be well to know the next parameters:
- 6 db bandwidth
- 50 db bandwidth
- attenuation
- insertion loss
- input/output impedance
- group delay time.

Thanks in advance.

73 de Karen Packet: RA3APW @ RA3APW.MSK.RUS.EU
Moscow, Russia Internet: karen@ra3apw.ampr.demos.su
Phone: +7-095-4746283 sysop@ampr.demos.su
AMPRNet: ra3apw@gw.ra3apw.ampr.org

2981. Q: VLF antenna design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 14:23:39 UTC
From: vhansen@ipfy.bau-verm.uni-karlsruhe.de
Message-ID: <37oolb$9k2@nz12.rz.uni-karlsruhe.de>
Source record: 116006
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi everybody!

First of all I want to apologize for my bad english regarding the technical terms--but being a beginner to antenna design implies not knowing all the words correctly.

I need some information on how to build a VLF antenna. It shall receive signals at 10-14kHz with an omnidirectional characteristic. It should also be quite small [<=1ft] in size.
Currently I am thinking of two ferrite bars (?) which are arranged orthogonally. What I need to know is how to calculate the resonant circuit. I also need infos on how to build a simple amplifier and connect the antenna to it. A transformation of the signal to other frequencies is not necessary.

Thaks in advance,

Wolfgang
--
vhansen@ipf.bau-verm.uni-karlsruhe.de | Gurus use `cat >a.out' instead of gcc
```
float o=0.075,h=1.5,T,r,O,l,I;int _,L=80,s=3200;main(){for(;s%L||
(h-=o,T= -2),s;4 -(r=O*O)<(l=I*I)|++ _==L&&putchar(*((--s%L?_<L?--_
%6:6:7)+"World! \n"))&&(O=I=l=_=r=0,T+=o /2))O=I*2*O+h,I=l+T-r;}
```

2982. Re: toroid identification

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 15:55:04 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct15.115504.12235@wb3ffv.wb3ffv.ampr.org>
Source record: 116010

Regarding the recent question about identification of toroids, the reply from W7EL is quite correct--there is no standard color code, for ferrites or powdered irons. Some time ago I looked through catalogs from a number of toroid manufacturers to see if there was a universal code, and the answer is: of course not! Probably the best thing to do when you see boxes of toroids at hamfests is to keep on walking. You can't be sure what they are, even if the seller claims to know. And, at least around here, it seems the prices are rarely bargains, anyhow.

I wrote up the results of my catalog search in my column in the QRP Quarterly, and later sent a shortened version to the Technical Correspondence column in QST. Here's the latter, which I wrote in the summer of 1993--

Powdered iron toroidal cores are frequently used in construction articles, and many homebrewers quickly learn to associate core color with certain characteristics. For example, a red core is type 2, with an initial permeability (ui) of 10, and yellow is type 6, ui 8. Some other commonly used cores are type 7 (white, ui 9), type 1 (blue, ui 20), type 3 (gray, ui 35), type 10 (black, ui 6), and type 0 (tan, ui 1). (Incidentally, the latter is actually made of phenolic, not powdered iron, and has the same permeability as air, even though it is usually listed together with powdered iron in brochures and catalogs.)

While we may think we know this color code well, there are times that it can backfire on us. Let's say you are at a hamfest and see a box full of surplus cores at attractive prices. Since they are a certain color you assume you know what they are, but if you take some home and put them in a project you might get a nasty surprise.

The problem is that the color code we know is only used by a very few manufacturers; there is no universal color code for powdered iron and ferrite materials. Not all hams know this, due in part, perhaps, to the fact that we usually get all our cores from the same source, well known retailers who advertise in QST. Their merchandise conforms to "our" color code, but few others in industry do. The code we know is actually the one used by Micrometals; Arnold Engineering also uses many (but not all) of the same color designators.

Let's say you come across a red core of unknown origin. Depending on who the manufacturer is, it could be the familiar type 2 powdered iron, ui 10, but it could also be a ferrite core with ui of 850, 1800 or 10,000. A yellow core could be type 6 with ui 8 or ferrite with ui 10,000. The type 7 material is white, and gaining in popularity

for building VFOs due to its improved temperature stability over type 6 (yellow); but a white core could also be a ferrite with permeability of 750 or 5000, with much worse temperature stability, to boot.

The same principle applies to all our familiar colors--they can't be trusted unless you know who put them there. Some manufacturers will supply every material in their product line in your choice of gray, black or green, while others will use any color the customer wants!

The moral is to be suspicious of a colored core if you don't positively know who made it or where it came from. Unless you know the source, its color is meaningless. Instead of the nice, friendly toroid you think it is, it could be something totally different.

73 de WA8MCQ

2983. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 17:47:44 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <37p4k0$54h@vixen.cso.uiuc.edu>
Source record: 116007

Dana Myers (myers@Cypress.West.Sun.Com) wrote:
> In article 9971@ultb.isc.rit.edu, jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
> >
> >I have a few projects in mind that use a MPF-102 for pre-amps on
> >2-meters and 440. Are there any newer parts that have better gain
> >or less noise? The Motorola RF Device book doesn't list substitutes
> >for the MPF102.

> I'd recommend the J308/309/310 family for 2m/70cm pre-amp use. A J310
> is certainly superior to an MPF102 in these applications. However, you
> may need to adjust the circuit to the different specs of the J310 (have
> a look at the data sheets). A 2N4416 is essentially identical to an
> MPF102, and may be easier to find.

The data sheet I have says a Siliconix U310 (Is this the same device as
J310?) 16dB of common-gate power gain at 105MHz and 11dB at 450MHz. The
noise figure is 2.7dB at 450MHz. I think this is certainly better than
the MPF102. There is also an improved version of MPF102 (MPF106, I think).

But still, this may not be the best choice for preamp circuits. Usually
MOSFETs are superior to J-FETs at higher frequency, and at 440
it would be so difficult to find a cheap J-FET that gives the gain and
NF as a MOSFET would. I usually recommend a dual-gate MOSFET for preamps
when some people might have a few in their part bin. I think the good old
40673 has been phased out but there are still plenty to choose from, like
3SK40, 3SK45, 3SK48, 3SK51, 3SK72-74, 3N204, 3N211, etc. These in general
will give you 20dB or more of gain and 2dB or less of NF in general up to
300MHz. I like 3SK72, 3SK73, or 3SK74 most, because they are rather
inexpensive and available in small microdisk package which is easier to
work with than TO-18, 72 or 92 package. 3SK72 is mostly used in TV or
FM radio, whereas 3SK74 has been found on many ham-gears from Japan.
(I think I first saw this first in my old IC-730 front-end mixer.)
There is a very good example of a dual-gate MOSFET preamp in recent
ARRL handbook.

If you have to buy something new, then I say go for a GaAsFET. There are
several types you can get for less than 5 buck a piece. A GaAsFET has
much better NF especially at 440. The handbook has several plans on this,
too.

Han KB9BQO / HL1AMS

> ---
> * Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
> * (310) 348-6043 | mine and do not necessarily *
> * Dana.Myers@West.Sun.Com | reflect those of my employer *

> * "Antenna waves be burnin' up my radio" -- ZZ Top *
--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

2984. Screen Voltage Protection Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 18:02:10 UTC
From: ells22@aol.com
Message-ID: <37p5f2$qlu@newsbf01.news.aol.com>
Source record: 116008

My 4-1000A Amp project is moving forward slooooly but surely. I need ideas on a sane, simple and safe (for me and the tube) interlock so that screen voltage can't be applied if the plate voltage is not present. It seems to me that I have to sense the 5KV directly, decide that it is or is not there and lock in/out the screen voltage. The circuit also has to react quickly in the event of Plate Voltage failure.

Any ideas would be appreciated. Remember I'm old, still understand 12AU7s, and need all the help I can get.

Thanks
WA6CWV, Russ Ellsworth, Boise Idaho

2985. Re: coffee-can notch filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-15 20:45:43 UTC
From: rkarlqu@scd.hp.com
Message-ID: <37pf1n$2ac@hpscit.sc.hp.com>
Source record: 116009

In article <1994Oct12.133106.31404@arrl.org>,
Zack Lau (KH6CP) <zlau@arrl.org> wrote:
>
>: The problem of course is that there is a very large amount of
>: circulating tank current in the device. Had it been silver-plated, it
>: could scale it up or down, but at higher freqs, the loss will be even
>: higher due to increasd skin effect.
>
>Silver plating tends to be over-rated. To reduce the loss from 3 dB to
>1 dB (still a lot of heat at the kW level), you would have to improve
>--

Yes, it is over-rated. In some studies, they found that
polishing the surface smooth in preparation for plating
improved the Q more than the actual plating.

Rick N6RK

2986. Re: Suggestions on Lemon Powered QRP rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 01:01:52 UTC
From: s2202629@np.ac.sg
Message-ID: <37pu20$kii@nova.np.ac.sg>
Source record: 115924

Well, from reading this thread, I figured that
moritz@ipers1.e-technik.uni-stuttgart.de
felt that calling the experiment 'lemon powered' isn't a good idea, and
would cause confusion to many people.

He wasn't really against the idea of it powering a QSO or for that matter,
probably anything else, but just, the way the 'concept' is being introduced.
(ie Lemon Power).

However, in all due respect, I would think that if the source of the
electricity (be it from lemons or otherwise) is properly explained, it'd be
pretty cool to run a rig on a couple of lemons, or anything else, besides a
battery.

For all you know, at the end of the project, KC4ROW could bring that project
+ a couple of lemons out on field day!

.

2987. High power QSK switching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 01:33:45 UTC
From: rohrwerk@giskard.holonet.net
Message-ID: <CxqsCA.DGK@iat.holonet.net>
Source record: 116012

I would like to build up a solid-state TR switching system for moderate power (300 watts).

Questions:

Anyone have a nice, safe PIN diode design? That is, with some kind of backup if the diodes fail?

What kind of diodes, and where do you get them?

I've had good success at 5 watt levels with 2 back to back 1N914 diodes, and my Ten Tec Argosy has a nice 2-diode switch at the 50 watt level. What about higher?

John Seboldt K0JD
Minneapolis, MN

2988. Re: Screen Voltage Protection Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 02:09:53 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct16.020953.23722@ke4zv.atl.ga.us>
Source record: 115925

In article <37p5f2$qlu@newsbf01.news.aol.com> ells22@aol.com (ELLS22) writes:
>My 4-1000A Amp project is moving forward slooooly but surely. I need
>ideas on a sane, simple and safe (for me and the tube) interlock so that
>screen voltage can't be applied if the plate voltage is not present. It
>seems to me that I have to sense the 5KV directly, decide that it is or is
>not there and lock in/out the screen voltage. The circuit also has to
>react quickly in the event of Plate Voltage failure.

The *simplest* way to do this is just to derive screen voltage from
plate voltage. Then if plate voltage is lost, screen voltage is
automagically lost as well.

Gary

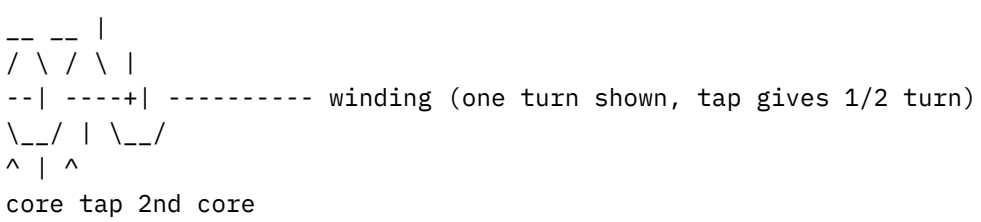
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2989. Re: Fractional turns on toroids? Use two (or more) cores...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 06:18:23 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCxr5In.6Eo@netcom.com>
Source record: 116016

In article <CxL2rA.Ct3@SSD.intel.com> dermer@ssd.intel.com (Greg Dermer) writes:
>but you CAN get fractional turns. Though theoretically
>possible at any frequency, it's practically limited to frequencies where
>laminated or tape-wound cores are used. Drill a hole through the core and
>run one turn through it so that that turn only links part of the flux in
>the core. Voila, a partial turn.
>
>
>It's a real drag trying to drill a hole in ferrite, though. ;)
>
Instead of drilling a hole, use two ferrite cores next to each other.
Wind the windings thru both cores, and the fractional tap would
be passed thru the gap between the two toroid cores. maybe try filing
a notch in both cores to pass the tap.

attempt at an ascii drawing:



2990. Understanding frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 09:49:02 UTC
From: markalin@aol.com
Message-ID: <37qsue$cbm@newsbf01.news.aol.com>
Source record: 115919

Hello,

My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio. I am having trouble understanding different type of frequency, their behavior and characteristics. For example the how does the 2-meter and 4-meter frequency differe? Like I've said I am very new at this but VERY interested. If anyone can suggest any books or other source of information. I would be very greatful. Please E-mail me for reply. Thanks

Mark Lin (KE6KWR)

2991. Toyocom TQF-456C Roofing Filter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 13:01:50 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <782312509snz@lfheller.demon.co.uk>
Source record: 115920

Hello, thanks for reading this.

A couple of years ago I picked up a 68.545 MHz Toyocom TQF-456C
Xtal filter at an amateur radio rally (hamfest in the US). It
was unused, and very cheap. Does anyone know anything about it?
It looks like a VHF roofing filter for an up-converting front-end
HF Rx. Putting it on my signal generator it appears to be quite
narrow band (15 KHz?), but does anyone know what the I/P and O/P
impedance is likely to be? I'd like to use it in a homebrew Rx.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

2992. Re: Understanding frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 15:22:46 UTC
From: jbaltz@aloha.cc.columbia.edu
Message-ID: <37rgg6$h3m@apakabar.cc.columbia.edu>
Source record: 116017

In article <37qsue$cbm@newsbf01.news.aol.com>,
Mark A Lin <markalin@aol.com> wrote:
>My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio.
>I am having trouble understanding different type of frequency, their
>behavior and characteristics. For example the how does the 2-meter and
>4-meter frequency differe? Like I've said I am very new at this but VERY

One is twice the frequency of the other.

>interested. If anyone can suggest any books or other source of
>information. I would be very greatful. Please E-mail me for reply.

"Look Who's Talking", the book which ARRL puts out to help you pass your
elements 2 and 3A. You might have read it at one time.

>Mark Lin (KE6KWR)

//jbaltz
jerry b. altzman Entropy just isn't what it used to be +1 212 650 5617
jbaltz@columbia.edu jbaltz@sci.ccny.cuny.edu KE3ML (HEPNET) NEVIS::jbaltz

2993. Range of cordless phones?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 17:22:48 UTC
From: la_tests@ccvax6.ccs.csus.edu
Message-ID: <1994Oct16.092248.1@ccvax6.ccs.csus.edu>
Source record: 115918

Hello everybody, I am new to this news group, however I am very
interested in Amatuer radio and electronics. I have had a few classes
and they have peaked my interest. I would like some advice though. I
would like to know if there are any particular books out there on
radio that describe cordless phones. Further, if anybody could give
me advice on how to make my cordless phone perform better (longer range)
I would appreciate.

You can E-mail me at ROMAND@CSUS.EDU

Thanks for any help or advice that you can give....

Dean Roman

2994. Re: Q: VLF antenna design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 18:39:56 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct16.183956.27000@ke4zv.atl.ga.us>
Source record: 115951
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <37oolb$9k2@nz12.rz.uni-karlsruhe.de> vhansen@ipfy.bau-verm.uni-karlsruhe.de (Wolfgang von Hansen) writes:
>
>I need some information on how to build a VLF antenna. It shall receive
>signals at 10-14kHz with an omnidirectional characteristic. It should also
>be quite small [<=1ft] in size.
>Currently I am thinking of two ferrite bars (?) which are arranged
>orthogonally. What I need to know is how to calculate the resonant circuit.
>I also need infos on how to build a simple amplifier and connect the
>antenna to it. A transformation of the signal to other frequencies is not
>necessary.

There are two styles of small VLF antennas, the voltage probe, and the magnetic loop. Your proposed solution is a magnetic loop. However, a voltage probe style may be better for omni coverage. A voltage probe antenna is a small vertical whip that would typically use a MOSFET in emitter follower configuration to transform the impedance of the probe down to something manageable to drive selective circuits. Typical circuits can be found in Loran C equipment.

The magnetic loop is a very common approach for MF and LF receiving antennas. It has the fault for your application of having a sharp null perpendicular to the plane of the loop windings. If you combine the signals of two orthogonal loops using a non-additive mixer (IE a chopper), you can simulate an omni pattern fairly well.

Resonance is calculated by the formula F=1/(2*pi*sqrt(L*C)) with frequency in Hertz, inductance in Henries, and capacitance in Farads. Calculating the number of turns for a given inductance on a ferrite is best done by consulting manufacturer's literature. There will be charts giving a value called Al for the particular material. This is a parametric value depending on permeability and the effective magnetic cross section of the material chosen. The number of turns required is then T=100*sqrt(L/Al) where L is the desired inductance in microHenries.

While you will typically use discrete active devices at the begining of your TRF amplifier chain for good noise figure, OPamps are typically used to obtain the bulk of the gain, and gyrators are used to give the large values of inductance needed for resonant circuits. Back end processing can be by use of switched capacitor filters, or today by DSP chips.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

2995. Re: Need info SFU455 filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 20:47:14 UTC
From: hbr@ix.netcom.com
Message-ID: <37s3gi$k1k@ixnews1.ix.netcom.com>
Source record: 115923
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew

In <AAzGudkCq8@ra3apw.ampr.demos.su> karen@ra3apw.ampr.demos.su (Karen Tadewosyan) writes:

>
>Hi,
>I am looking for info about SFU455 ceramic filters. I have some SFU455A and
>SFU455B that I plan use, if it possible, in 9600/19200 designing packet rig.
>
>It will be well to know the next parameters:
> - 6 db bandwidth
> - 50 db bandwidth
> - attenuation
> - insertion loss
> - input/output impedance
> - group delay time.
>
>Thanks in advance.
>
>73 de Karen Packet: RA3APW @ RA3APW.MSK.RUS.EU
>Moscow, Russia Internet: karen@ra3apw.ampr.demos.su
>Phone: +7-095-4746283 sysop@ampr.demos.su
> AMPRNet: ra3apw@gw.ra3apw.ampr.org
>
>

Here is some of the info:
SFU455A: 10=/-3KHz at -3db, 5 dB insertion loss. No numbers shown in
catalog
for 60 dB. Only spec is "6 db selectivity @ -10 KHz.".

Specs are same for SFU455B, except center f is 462 KHz., and this
part is meant to be used with an IF transformer.

You might try Murata/Erie for more info; 2200 Lake Park Drive,
Smryrna, Georgia 30080. Fax 404-436-3030.

2996. Re: Cordless Phone Reciever?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-16 21:46:19 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <37s6vb$4gg@maple.enet.net>
Source record: 115922

> John Fleming
> (fleming@mcs.com) wrote:
> : Does anyone know where there might be a schematic/parts list, or article,
> : about building a receiver for standard (non-digital) cordless phone
> : transmissions? I think they're somewhere in the 49 Mhz range, identified by
> : 1-10 channels. Anyone Help?
> : Thanks,
> : John Fleming, N9NDH

Call your local Motorola distriubutor or sales office and see if they'll send
you Motorola Application Note 980. It's all about using the MC3362
and MC3363, and includes a full schematic of a portable phone
receiver, which could be precisely what you want. Motorola has a
line of custom dual PLL synth chips with a separate synth for xmit
and receive, with values embedded in internal PROM for dividing down
to values appropriate for the 10 standard phone frequencies in the
US. The parts count on such a system is very low. Give it a shot!

--73--

--Jeff Duntemann KG7JF
jeffd@coriolis.com

2997. Re: Understanding frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 01:51:52 UTC
From: rkm@vectorbd.com
Message-ID: <CxsnuH.LK5@vectorbd.com>
Source record: 115932

Jerry B Altzman (jbaltz@aloha.cc.columbia.edu) wrote:
: In article <37qsue$cbm@newsbf01.news.aol.com>,
: Mark A Lin <markalin@aol.com> wrote:
: >My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio.
: >I am having trouble understanding different type of frequency, their
: >behavior and characteristics. For example the how does the 2-meter and
: >4-meter frequency differe? Like I've said I am very new at this but VERY

: One is twice the frequency of the other.

: >interested. If anyone can suggest any books or other source of
: >information. I would be very greatful. Please E-mail me for reply.

: "Look Who's Talking", the book which ARRL puts out to help you pass your
: elements 2 and 3A. You might have read it at one time.

Sigh. As a relative newcomer to Amateur Radio myself, I'm finding that
I'm starting to agree with a large number of the OF's over on
.policy, when it comes to testing requirements. :-(

- Rich

2998. anyone know anything about hallicrafters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 04:04:20 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <Cxstz9.2py@rahul.net>
Source record: 115927

i recently picked up a old hallicrafters shortwave reciever. i would like to see if i can get some schematics,information or anything on it. on the tune dial it says "Skyrider jr." and i can barely make out the model no. it says model "h" in a white circle and after that it says either one of these, i can't tell it's a little rusty, but it's either a s-416, s-116,s-110, s-410. it's about a foot long and about 9 inches tall and about 9 inches wide. and also does hallicrafters still exist? if it does could anyone give me the any information on how to contact them.

thank you,
mlyon@rahul.net
--
//////////////////////
| Mike Lyon |
| KE6MRE |
| mlyon@rahul.net |

2999. Re: Q: VLF antenna design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 04:15:40 UTC
From: monta@pixel.mit.edu
Message-ID: <MONTA.94Oct17001540@pixel.mit.edu>
Source record: 115926
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

> > [VLF antenna, 10--14 kHz]
>
> There are two styles of small VLF antennas, the voltage probe, and
> the magnetic loop. Your proposed solution is a magnetic loop. However,
> a voltage probe style may be better for omni coverage. A voltage probe
> antenna is a small vertical whip that would typically use a MOSFET in
> emitter follower configuration to transform the impedance of the probe
> down to something manageable to drive selective circuits. Typical circuits
> can be found in Loran C equipment.

It sounds like he wants an Omega antenna, from the frequencies.
I've heard that loops can give lower noise at VLF, since
man-made noise is on the high-impedance side; still, the
extra headaches of diversity for the two loops might
be too much.

Peter Monta monta@image.mit.edu
MIT Advanced Television Research Program

3000. tuning circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 11:54:14 UTC
From: mike@io.org
Message-ID: <37tol6$hb@ionews.io.org>
Source record: 115967

I'm experimenting with a simple 'crystal radio circuit': coil in parallel with a tuning cap from an am radio, germanium diode, lm2904 opamp.

I'm trying to tune it to the 80, 40 or 20 meter bands, and have experimented with winding different coils, air and toroids. It seems that whatever coil I use, I'm always tuning either the a.m. broadcast band (~ 1Mhz) or else around 5Mhz. The circuit is on a plug in breadboard. Would the breadboard be causing this limitation in tuning?

What would the capacitance range of the tuning cap be? It's from a cheap a.m radio. The cap is marked 'Nissan PVC-2A'.

As an experiment, I tried replacing the coil with a 3.5Mhz xtal. The result was no output. Is it possible to use the xtal as a tuning coil?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

3001. Re: High power QSK switching

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 13:17:48 UTC
From: zlau@arrl.org
Message-ID: <1994Oct17.131748.18599@arrl.org>
Source record: 115953

John Seboldt K0JD (rohrwerk@giskard.holonet.net) wrote:
: I would like to build up a solid-state TR switching system for moderate
: power (300 watts).

: Questions:

: Anyone have a nice, safe PIN diode design? That is, with some kind of
: backup if the diodes fail?

One technique that I've used is to bias the amplifier through shunt
diodes. Thus, if the diode opens, allowing the signal to get through,
the amplifier will be biased in the cutoff region, dramatically cutting
the gain. If the diode shorts, it still works as a shunt element.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3002. Re: Suggestions for my power distribution system?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 16:50:34 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <CxttGC.CrB@wb6hqk.ampr.org>
Source record: 115952

In article <finster.345.2E9DFB49@zeus.fasttax.com>,
David Finster <finster@zeus.fasttax.com> wrote:
>
>I'm setting up a ham shack here in my apartment and I'm looking for
>suggestions. Currently I'm using (well, listening for now... still checking
>the mailbox every day for my ticket) a HTX-202 and an Icom 4AT for radios,
>along with a couple scanners. I have a two large (larger than car battery,
>about the size of semi-tractor battery) 12 volt gel-cell batteries and want to
>use them in my power system. (got 'em for free, might as well use em...) My
>current plan runs something like this:
>
>Hook both gel-cells up in parallel, and trickle charge them from solar
>cells. Then run the output from the batteries up to a power distribution
>center (large project box) with a central amp and volt meter on the main line
>to monitor the battery state. I plan to have 4 or 5 outputs on the project
>box. The current plan is to use some Radio Shack "universal voltage adapters"
>to regulate the voltage on the output. I've found the cigarette lighter type
>at swap meets for a couple bucks each. That way I can switch the voltage
>between 3, 6, 9, and 12 volts at each output, and toggle the polarity by
>changing the end plug. I'm not sure how much current draw those adapters will
>stand, even though they are the "high-power" type, and are vented for cooling.
>
>My thought was by using a system like this, I could kill any AC hum in the
>system. Also, I could easily stay on the air when the power goes out.
>
>I do have a few questions:
>
>The batteries have no markings at all. All I know is that they are 12 volt,
>they will take a charge when I charge them up with my 10 amp car battery
>charger, and they weigh a ton. (ok, about 75 or 80 pounds each.) Any ideas
>on what sort of current draw they will stand, and what sort of battery life I
>can expect? These were discarded from a UPS system because they
>reportedly "wouldn't take a full charge". After charging with my battery
>charger, they measure right at 12 volts on my dinky voltmeter, under no load.

When new, they were probably in the 100 AH range. There is no telling what
the capacity is now since they are used but you can easily enough run a
test to determine their useful capacity. The test should be done individually
so you can determine if one is in better shape than the other. Begin with
fully charging the battery followed by a couple of hours to days off the
charger to determine the fully charged open circuit voltage. It should be
around 12.6 volts at room temperature. Next attach a suitable load drawing
perhaps 1 - 5 amps nominal and measure the initial current and battery
voltage under load. An automotive headlamp is an excellent load for this

purpose but the resistance isn't constant at different voltages so you
will need to actually measure the load current. One interesting feature
of incandescent lamps is that the resistance variation with applied voltage
is such that the current tends to be constant, handy for this application.
Periodically record the battery voltage and load current until the voltage
drops to 10 volts at which time you should consider the battery dead. The
battery capacity is then approximately the load current times the number of
hours to reach the cutoff. I suggest you make a graph which you can later
use to interpret the battery voltmeter.

>
>If I can get a bank of solar cells together that would put out 12+ volts at a
>trickle charge (100 - 200 milliamp) will I hurt the battery by leaving it
>hooked up all the time?

Probably not. As a very rough rule of thumb, I have found the float current
required to keep any lead acid (including Gel-Cells) at float voltage is
around 1.0 mA per Amp-Hour of battery capacity. This means your system would
likely float at around 200 mA and wouldn't be overcharged at that rate.
Luckily, when the battery is less than fully charged, the leakage current
appears to be more like 0.1 to 0.5 mA per AH capacity meaning the battery
will charge somewhat but probably not reach full charge.
>
>Do I need diodes in-line with the solar cells to prevent the batteries from
>leaking voltage back through the solar cells?

This depends on the solar panel. Measure the reverse leakage current and
make a determination. If the solar panel (Silicon cells assumed) has
36 cells, the diode is a winner; if it's less than 36 cells then maybe not.
>
>Is my solar-cell idea just a fantasy?

I did exactly what you're talking about a number of years ago and it did
the job but I think you'll find an AC charger will be far more cost
effective and you'll still have days of endurance if the power fails.
>
>Assuming my solar-cell idea is a fantasy, anyone have useful schematics for a
>trickle charger I can build pretty cheap?
About the easiest is to buy a cheapie 12 V power supply of the sort sold
by Radio Shack for running CB radios and car stereos and hack it. Most i've
hacked had the expected transformer, rectifier and filter capacitor followed
by a pass transistor controlled by a 723 type voltage regulator IC. Some
already have a voltage trim pot but you can easily trace the circuit and
figure out how to put one in. The supplies are usually equipped with
overcurrent protection and are good for a couple of amps; perfect for your
application.
>
>I thought it would be useful to have the main volt and amp meters switchable
>so that I could monitor the main line for total current draw and voltage, or
>monitor each output alone. I think it would be too expensive (though
>impressive!) to have seperate meters for the main and all outputs. The

>problem I see is that switching the meters in and out of circuit would disrupt
>power to the outputs while switching. Any suggestions to solve this problem?

Use a meter shunt. The standard approach to the problem of switching ammeters is to permanently install a shunt resistor in series with the circuit whose current is to be measured. A typicall shunt would have a voltage of 50 millivolts for a full scale current, which could be anywhere from an amp to thousands. The shunt is connected to the panel meter which is simply a 0 - 50 millivolt volt meter with the meter face calibrated in amps. Switching the low level signal is simple but be very careful not to blow up the meter movement as they typically only require 1 mA for full scale deflection and will destroy themselves instantly if connected directly to the battery. The same meter movement can also be used to measure battery voltage with a suitable series 'mulitplier' resistor. A typical meter movement for this application will be sold as 0 - 1 ma full scale and will have an internal resistance of 50 ohms giving it a full scale voltage of 50 millivolts. You can make a shunt resistor from ordinary copper wire by calculating the length required to get the desired resistance. For example, suppose you want 2 amps full scale and you have the meter movement described above. You want 2 amps to give a 50 millivolt drop so you using ohms law, you find a resistance of 25 milliohms is required. Going to the wire tables, you find #20 AWG copper wire has a resistance of around 10 milliohms per foot and is easily capable of handling 2 amps. Make the shunt by inserting a three or so foot piece of wire in the circuit to be measured and tapping into the wire at two points along the wire seperated by 2.5 feet. Be very careful to insure it's not possible to have the meter connected when the shunt's not.

>
>I plan to place fuses inline with each output. Any suggestions on type of
>fuses, or are there small circuit breakers that would do the job properly?

Fuses are more versatile and considerably cheaper and easier to find.

>Any hidden grounding problems with the above setup that might bite me? I'm
>currently running from a homemade folded dipole, and a 5/8 wave mag-mount
>antenna, so the whole setup is floating with no earth ground at all. Should I
>be concerned with it?

I would ground the negative side to your safety ground but it may not be absoultly required.

>I know someone out there must have a similar setup. Any comments or hindsight
>observations? I apologise in advance if these seem to be trivial questions
>and a waste of bandwidth.

To begin with I wouldn't bother with the solar panel other than to allow for it in your switch/metering box. You will need a place for the diode and you'll probably find the solar panel current will be the most popular meter position. If you do invest in a panel, I would suggest you don't bother with anything smaller than 0.5 Amp for full sun as it won't help much. If you plan on keeping your radios on full time you will need a much larger panel.

Feel free to email for clarifactions or further discussion.

bart wb6hqk

bart@wb6hqk.ampr.org

3003. Re: Understanding frequency

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 17:06:54 UTC
From: mike@shien.ist.csuohio.edu
Message-ID: <1994Oct17.170654.28632@news.csuohio.edu>
Source record: 115937

markalin@aol.com (Mark A Lin) writes:
: Hello,
:
: My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio.
: I am having trouble understanding different type of frequency, their
: behavior and characteristics. For example the how does the 2-meter and
: 4-meter frequency differe? Like I've said I am very new at this but VERY
: interested. If anyone can suggest any books or other source of
: information. I would be very greatful. Please E-mail me for reply.
: Thanks
:

Mark,

Not so much that they are different "types" of frequencies (although
they are indeed different), but rather the "different" types of
activities that take place on the various ham bands.

If you are still having trouble grasping all that is above 30MHz,
the ARRL puts out a pretty good introductory book called
"Your VHF Companion". Under $20, can get at most ham stores,
or order directly from ARRL. Sorry, I don't have their number on me.

Also, "Now You're Talking" from Radio Shack is a good book.

Mike

--
^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v Catch the WAVE ^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v^v
Michael Mayer, Senior Technical Support Engineer Amateur Radio KB8RJO
Visual Numerics, Inc. 32915 Aurora Rd. Suite 160, Solon OH 44139 USA
Email: mayer@boulder.vni.com Human: 216-248-4900 Fax: 216-248-2733
v^v^v^v^v^v^v^v^v^v^v Good * Cheap * Quick (pick any two) ^v^v^v^v^v^v^v^v^v^v^

3004. Re: Q: VLF antenna design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 17:55:13 UTC
From: ravengre@adcae1.comm.mot.com
Message-ID: <1994Oct17.175513.4400@lmpsbbs.comm.mot.com>
Source record: 115954

I would not recommend the loop antenna approach with the requirements
of small size and omnidirectional. An active antenna using an FET as
an impedance transformer would work very well. This is really nothing
more than a common drain amplifier with an electric field probe connected
to the gate.

Regards,
Greg Raven
egr002@email.mot.com

3005. SWR between transmitter and amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 19:39:19 UTC
From: tom_taylor@taligent.com
Message-ID: <tom_taylor-1710941239150001@tom-taylor.taligent.com>
Source record: 115888

I recently finished building a homebrew two tube 4-400 grounded grid amplifier for 80-10 meters. It works great. However, I didn't build a band-switched tuned input circuit. Without it, the input impedence is approximately 50 ohms... but not exactly. I'm driving the amp with a solid state rig (TS440s). Since the amp doesn't present a perfect match to the transmitter, I use the transmitter's internal tuner to match the transmitter to the amplifier.

Question (not a trick question, I really want to know!): Where does all the reflected power from the transmitter go? Is it radiated from the three foot piece of coax connecting the two pieces of equipment? Or is it heating up some component somewhere?

Thanks,
Tom aa6br

--
Tom Taylor
aa6br

3006. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 22:11:09 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <37uspt$kra@abyss.West.Sun.COM>
Source record: 115940

In article 54h@vixen.cso.uiuc.edu, hskim@ripley.ece.uiuc.edu (Han Kim) writes:
>Dana Myers (myers@Cypress.West.Sun.Com) wrote:
>> In article 9971@ultb.isc.rit.edu, jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
>> >
>> >I have a few projects in mind that use a MPF-102 for pre-amps on
>> >2-meters and 440. Are there any newer parts that have better gain
>> >or less noise? The Motorola RF Device book doesn't list substitutes
>> >for the MPF102.
>
>> I'd recommend the J308/309/310 family for 2m/70cm pre-amp use. A J310
>> is certainly superior to an MPF102 in these applications. However, you
>> may need to adjust the circuit to the different specs of the J310 (have
>> a look at the data sheets). A 2N4416 is essentially identical to an
>> MPF102, and may be easier to find.
>
>The data sheet I have says a Siliconix U310 (Is this the same device as
>J310?) 16dB of common-gate power gain at 105MHz and 11dB at 450MHz. The
>noise figure is 2.7dB at 450MHz. I think this is certainly better than
>the MPF102. There is also an improved version of MPF102 (MPF106, I think).
>
>But still, this may not be the best choice for preamp circuits. Usually
>MOSFETs are superior to J-FETs at higher frequency, and at 440
>it would be so difficult to find a cheap J-FET that gives the gain and
>NF as a MOSFET would. I usually recommend a dual-gate MOSFET for preamps
>when some people might have a few in their part bin. I think the good old
>40673 has been phased out but there are still plenty to choose from, like
>3SK40, 3SK45, 3SK48, 3SK51, 3SK72-74, 3N204, 3N211, etc. These in general
>will give you 20dB or more of gain and 2dB or less of NF in general up to
>300MHz. I like 3SK72, 3SK73, or 3SK74 most, because they are rather
>inexpensive and available in small microdisk package which is easier to
>work with than TO-18, 72 or 92 package. 3SK72 is mostly used in TV or
>FM radio, whereas 3SK74 has been found on many ham-gears from Japan.
>(I think I first saw this first in my old IC-730 front-end mixer.)
>There is a very good example of a dual-gate MOSFET preamp in recent
>ARRL handbook.

The Motorola data sheet for the J310/U310 suggests that 1.5dB is the typical
NF at 450MHz for a J310, and the available gain is certainly in excess
of 11dB. I skimmed the data sheets for other Motorola RF MOSFETs; none of
them had a lower NF than the J310, though several of them were specified
as sporting higher gain. The simple fact is, you don't necessarily want too
much gain in a pre-amp; afterall, what good is a pre-amp that makes your
radio overload and generate intermod in the front end?

>If you have to buy something new, then I say go for a GaAsFET. There are
>several types you can get for less than 5 buck a piece. A GaAsFET has
>much better NF especially at 440. The handbook has several plans on this,
>too.

GaAsFETs can certainly offer excellent performance, but aren't exactly cheap and are generally a little less rugged than JFETs. Frankly, in the real terrestrial FM world, a super gain/super low noise preamp is probably not as much of an advantage as it is in the small-signal (EME, etc.) world. You can build a J310 based preamp for 450MHz that offers a healthy +13dB of gain with a +19dBm intercept and a noise figure under 2dB quite cheaply (under 50 cents for the J310). When the next electrical storm rolls through, your JFET will probably still be working afterwards, and only costs $.50 to replace if it fails :-)

I personally think people get too hung up on gain, sensitivity and noise figure specifications without considering the gain and noise distribution in a receiver, and also the environment the receiver is operated in. This is how we get .1uV receivers that crunch at the slightest provocation.

The original question was "what is a good replacement for the MPF102?". If the answer is constrained to JFETs, the J310 is probably the best answer in terms of price, availability and performance. It is in the same TO-92 package as the MPF102 and offers superior performance, in most cases with minimal circuit adjustment.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

3007. requesting opinion on handhelds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-17 23:42:14 UTC
From: sinned@u.cc.utah.edu
Message-ID: <37v24m$13u@u.cc.utah.edu>
Source record: 115955

I have looked at several brands of handheld ham radios, and I have decided on getting either a Yaesu ft530, or a Kenwood th78a. Can anyone out there give their opinion of either one, or ups and downs of both? I'd also appreciate any other brands you might recommend, and your reason for recommending it.
Thanks

3008. Microwave oven leakage?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 00:22:49 UTC
From: Mike Shales <shales@hookup.net>
Message-ID: <37v4gp$fit@relay.tor.hookup.net>
Source record: 115938

Sorry, this is an out of left field question, but...

Is there a simple circuit/device that will show leakage around
a microwave oven? If so I'd like a reference or description :-)

Thanks... Mike

Shales@hookup.net

3009. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 05:19:33 UTC
From: hskim@ripley.ece.uiuc.edu
Message-ID: <37vlt5$g31@vixen.cso.uiuc.edu>
Source record: 115868

Dana Myers (myers@Cypress.West.Sun.Com) wrote:

> The Motorola data sheet for the J310/U310 suggests that 1.5dB is the typical
> NF at 450MHz for a J310, and the available gain is certainly in excess
> of 11dB. I skimmed the data sheets for other Motorola RF MOSFETs; none of
> them had a lower NF than the J310, though several of them were specified
> as sporting higher gain. The simple fact is, you don't necessarily want too
> much gain in a pre-amp; afterall, what good is a pre-amp that makes your
> radio overload and generate intermod in the front end?

Good point. I would certainly go for higher dynamic range than higher
gain for my receiver design; but when I switch in a pre-amp, I really
switch in. Sometimes one really could use extra couple of dB, but it's
not usually the case when all you listen to is FM repeaters. Sometimes
having too much gain hurts rather than helps.

> >If you have to buy something new, then I say go for a GaAsFET. There are
> >several types you can get for less than 5 buck a piece. A GaAsFET has
> >much better NF especially at 440. The handbook has several plans on this,
> >too.

> GaAsFETs can certainly offer excellent performance, but aren't exactly
> cheap and are generally a little less rugged than JFETs. Frankly, in
> the real terrestrial FM world, a super gain/super low noise preamp is
> probably not as much of an advantage as it is in the small-signal (EME,
> etc.) world. You can build a J310 based preamp for 450MHz that offers
> a healthy +13dB of gain with a +19dBm intercept and a noise figure
> under 2dB quite cheaply (under 50 cents for the J310). When the next
> electrical storm rolls through, your JFET will probably still be
> working afterwards, and only costs $.50 to replace if it fails :-)

Right again. GaAsFETs are not cheap. But that doesn't mean that you
cannot afford one; sometimes I have to spend extra couple of bucks for
a superior performance. We have to spend extra $5 when we need 20dB more
gain and to keep receiver NF under 3dB. (The overall NF of a receiver
is mostly determined by the NF of the first stage.) But then again,
this may not be a typical requirement. For most 2m and 70cm application,
the J310 woudld be a good choice.

> I personally think people get too hung up on gain, sensitivity and
> noise figure specifications without considering the gain and noise
> distribution in a receiver, and also the environment the receiver is
> operated in. This is how we get .1uV receivers that crunch at the
> slightest provocation.

Yes. It is of no use, in general, to build a receiver with 5dB of overall
NF in HF, as well as one with -150 dBm of minimum decernible input.
But there might be someone who really need such things, however
improbable. Sometimes it helps to know what other ways are there.
I wonder if suggesting alternatives would offend the original poster
or others.

> The original question was "what is a good replacement for the
> MPF102?". If the answer is constrained to JFETs, the J310 is probably
> the best answer in terms of price, availability and performance. It is
> in the same TO-92 package as the MPF102 and offers superior performance,
> in most cases with minimal circuit adjustment.

It has been answered, and answered well.
> ---
> * Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
> * (310) 348-6043 | mine and do not necessarily *
> * Dana.Myers@West.Sun.Com | reflect those of my employer *
> * "Antenna waves be burnin' up my radio" -- ZZ Top *

Han..

--
Han Seok Kim | hskim@uiwpls.ece.uiuc.edu
Wave Propagation Lab. | (217) 333 - 4406
Univ. of Illinois at Urbana-Champaign | Linux - to die for

3010. Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 06:41:10 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <37vqm6$17hu@yuma.ACNS.ColoState.EDU>
Source record: 115945

Hello I have an electronics project that i need to build. I want to build a 40 meter CW transmitter. The only one that i can find is in the ramsey cat alog, but it says that the coverage is 7.040 MHz and can be tuned to 7KHz around the XTAL frequency. I'm not familiar with the 40 meter but if I'm reading my info correctly for a techpluss operator I am allowed privilages on 7100 to 7150 KHz. If my math and info are correct this will not work for me! Any suggestions?
Thanks Robert (KB0PED)

3011. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 07:18:35 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <37vssb$laq@abyss.West.Sun.COM>
Source record: 115942

In article 17hu@yuma.ACNS.ColoState.EDU, greendot@lamar.ColoState.EDU (Robert Taylor) writes:
> Hello I have an electronics project that i need to build. I want to build a
> 40 meter CW transmitter. The only one that i can find is in the ramsey cat
> alog, but it says that the coverage is 7.040 MHz and can be tuned to 7KHz
> around the XTAL frequency. I'm not familiar with the 40 meter but if I'm
> reading my info correctly for a techpluss operator I am allowed privilages
> on 7100 to 7150 KHz. If my math and info are correct this will not work
> for me! Any suggestions?
> Thanks Robert (KB0PED)

Give Ramsey a call. They may offer a rock which tunes the Novice portion of 40m. There are other kits, too, such as Oak Hills Research and A&A Engineering. I know that Ed Hare at the ARRL is a big QRP fan; his email address is ehare@arrl.org. He can probably point you at data you'll find very interesting. Also, if this is your first HF experience, note that QRP can be very challenging (i.e. frustrating) even for very experienced radio amateurs. A used transmitter with higher output power can often be found at swap meets or in amateur related want-ads at very reasonable prices.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

3012. Re: tuning circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 11:47:27 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <380ckf$nb6@info2.rus.uni-stuttgart.de>
Source record: 115870

>I'm experimenting with a simple 'crystal radio circuit': coil in parallel with
>a tuning cap from an am radio, germanium diode, lm2904 opamp.

Mike,

I am afraid you are grossly underestimating the requirements for a amateur
band receiver, and even for simple AM broadcast reception.
If you can get hold of the integrated AM receiver ZN414 or a descri-
ption thereof, you might learn what can be done with a simple detector
receiver.

An amateur band RX *requires* a local oscillator, for ssb or cw detection.
you find simple "direct conversion" receivers in the ARRL Handbook.

Good luck and success with future projects, Moritz DL5UH

3013. Omega (was: Re: Q: VLF antenna design)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 12:35:01 UTC
From: vhansen@ipfy.bau-verm.uni-karlsruhe.de
Message-ID: <380fdl$5q0@nz12.rz.uni-karlsruhe.de>
Source record: 115947
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <MONTA.94Oct17001540@pixel.mit.edu> monta@pixel.mit.edu (Peter Monta) writes:
>gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>
>> > [VLF antenna, 10--14 kHz]
>
>It sounds like he wants an Omega antenna, from the frequencies.

Yes, you got it. I didn't want to use the word Omega in my first posting
because I was afraid to get less answers to such a specific question.

But as it seems that some people here heard of Omega before, I will ask
the question in another way:
Who can tell me how to build an Omega antenna?

Wolfgang
--
vhansen@ipf.bau-verm.uni-karlsruhe.de | Gurus use `cat >a.out' instead of gcc
```
float o=0.075,h=1.5,T,r,O,l,I;int _,L=80,s=3200;main(){for(;s%L||
(h-=o,T= -2),s;4 -(r=O*O)<(l=I*I)|++ _==L&&putchar(*((--s%L?_<L?--_
%6:6:7)+"World! \n"))&&(O=I=l=_=r=0,T+=o /2))O=I*2*O+h,I=l+T-r;}
```

3014. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 14:27:08 UTC
From: geertj@ripe.net
Message-ID: <CxvHH9.FvH@inter.NL.net>
Source record: 115943

>In article 17hu@yuma.ACNS.ColoState.EDU, greendot@lamar.ColoState.EDU (Robert Taylor)
writes:
>> Hello I have an electronics project that i need to build. I want to build a
>> 40 meter CW transmitter. The only one that i can find is in the ramsey cat
>> alog, but it says that the coverage is 7.040 MHz and can be tuned to 7KHz
>> around the XTAL frequency. I'm not familiar with the 40 meter but if I'm
>> reading my info correctly for a techpluss operator I am allowed privilages
>> on 7100 to 7150 KHz. If my math and info are correct this will not work
>> for me! Any suggestions?
>> Thanks Robert (KB0PED)

Check out the books 'Solid state basics' and 'solid state design'.
(don't know if the first one is still available).
Both will allow you to learn what you need and build your
equipment while still having a fighting chance to make it work,
and know how to fix it if it doesn't.

It will be fun!

Don't know about US regulations though.

73 Geert Jan PE1HZG

3015. Re: Microwave oven leakage?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 14:38:15 UTC
From: gbelton@rs1.tcs.tulane.edu
Message-ID: <380mkn$smf@news.cs.tulane.edu>
Source record: 115957

Mike Shales (shales@hookup.net) wrote:
: Sorry, this is an out of left field question, but...

: Is there a simple circuit/device that will show leakage around
: a microwave oven? If so I'd like a reference or description :-)

Saw one at Wal-mart last night. It's a plastic card the size of a
credit card, with an LCD strip along one edge. The instructions say
to move it around the door of the oven for a specified amount of time
while the oven is on, and it displays a Good/Bad reading. Cost about
six dollars.

--

"What a strange person. I don't speak
Is there anyone else up there we can talk to?" for Tulane.

3016. Re: Range of cordless phones?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 14:54:53 UTC
From: byrne_mike@mm.ssd.lmsc.lockheed.com
Message-ID: <byrne_mike-1810940758030001@129.197.110.142>
Source record: 115948

In article <1994Oct16.092248.1@ccvax6.ccs.csus.edu>,
la_tests@ccvax6.ccs.csus.edu wrote:

> Hello everybody, I am new to this news group, however I am very
> interested in Amatuer radio and electronics. I have had a few classes
> and they have peaked my interest. I would like some advice though. I
> would like to know if there are any particular books out there on
> radio that describe cordless phones. Further, if anybody could give
> me advice on how to make my cordless phone perform better (longer range)
> I would appreciate.
>
> You can E-mail me at ROMAND@CSUS.EDU
>
> Thanks for any help or advice that you can give....
>
> Dean Roman

Suggest you send an E-mail to "info@arrl.org" to get information on what
resources are available from the Amateur Radio Relay League, the national
ham organization in the US. Ham publications do not address cordless
phones directly, but antenna principals would apply.

3017. Getting on 2.4 Gigahertz

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 15:56:58 UTC
From: drp@netcom.com
Message-ID: <drpCxvLMy.Gs9@netcom.com>
Source record: 115872

Newsgroups: rec.radio.amateur.homebrew
Subject: Getting on 2.4 Gigahertz
Distribution: usa
Organization: NETCOM On-line Communication Services (408 261-4700 guest)

I have been looking into getting equipment or building some
equipment to operate on 2.4 gig in the Santa Clara Valley.
(San Jose Calif Area). I have been looking for the best ie
cheapest way to get on 2.4 gig. I have a 1.2 gig HT and some
other equipment. I have been looking at swap meets and such
but have not found anything that I can use. I am posting this
so that some MicroWave type Elmer out there might have some
wisdom to share. There are 2 or 3 2.4 gig repeaters groups
and I am talking with them also. I am a software and digital
electronics type so RF and especially MicroWave is new to me.
Any help would be appreciated.

Randy Petersen
drp@netcom.com
KE6IZZ

3018. VLF Antenna Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 16:11:30 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <20261@uugate.wa7slg.ampr.org>
Source record: 115946

I have "dabbled" with LF/VLF numerous times in the past... and built a number of antennas.

One of the best antennas that I built for this purpose was a shielded loop... This consisted, quite simply, of a loop, about 3 feet in diameter, constructed of CATV hardline. The bottom end was open with the shield grounded at both ends , and at the top, there was a gap in the shield ONLY. There is a sort-of drawing (note that it is square, since those are easier to draw...)

```
i-----------------l_l---------------i
li---------------------------------il
lil---------------l-l-------------lil
lil lil
lil lil
lil lil
lil lil
lil lil
lil lil
lil lil
lil lil
lil lil
lil l------l lil
lil-------------l l----------lil
li-----------------XX--------------il
i---------------l______l------------l
```

It may be a bit hard to see (I'm not very good at ASCII "art") but there is a gap in the shield at the top, but the shield is connected at the bottom. The "XX" in the box is the RF amplifier/transformation circuit.

The one I built, again, used CATV hardline with a slot carefully sawed in the shield at the top, using some kludged compression fittings at the bottom on an aluminum case. I also built one using copper tubing (it was easier) and in that case, I was able to more easily mount it at the bottom using the readily-available compression water fittings.

The XX circuit could be any number of things, but one thing that DOES work relatively well is just a simply audio transformer of the 8-ohm type. (Yeah, like the one they sell at radio shack...) The 8 ohm side goes on the loop, and the other side connects to a common-gate FET preamplifier. Depending on frequency, etc, I experimented with the centertap on the audio transformer for best signal.

I built this loop and it worked well even into the AM broadcast band (the transformer itself is "OK" - not great - to over 100 KHz). On this single-turn loop, you can often broadly resonate the loop with some capacitors.

It may take several 10's of nanofarads to do it at 100 KHz, and maybe several microfarads farther down (hint: use a huge pile of mylar caps... electrolytics really suck rocks for this...) A friend of mine use the copper-pipe loop (did I mention the single conductor of wire in the pipe?) and resonated a multi-turn secondary.

The trick is, with an H-field loop, is to keep the shielding in good shape. The one that I built with copper ('never tried it with the aluminum coax version...) I could null out a local 50kw AM station. You can't do that if the antenna happens to respond to E-field, as well, so you have to make sure things are in a shielded enclosure.

One thing is sure: with a single-turn loop, the ONLY good way to match the impedance of the loop element itself to any practical amplifier circuit is with a transformer. This is because the impedance of the loop can be a small fraction of an ohm at these frequencies...

One word about E-field whips: I have a decent E-field whip and it works very well... provided that you are NOWHERE NEAR a powerline... Its frequency response extends into the KHz region (if I place it near an audio line, like one leg of a speaker wire...) I can hear what is being carried if I have the output of the antenna connected to a high-gain audio amp... but the OMEGA signals will drive you bananas, too...) If you are 'bent on building one of these, I would consult one of the several articles written in the past by Ralph Burhans that have appeared in 73 Magazine. HE knows of what he speaks! Again, they DO work well, but in urban environments, expect to hear a lot of noise... unless you are lucky... and no-one is using a light-dimmer in your neighborhood... Even then, you could use a synchronous noise-blanker, but thats another story...

<Clint>

ka7oei@uugate.wa7slg.ampr.org

3019. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 16:27:34 UTC
From: bkehr@garnet.berkeley.edu
Message-ID: <bkehr-1810940827340001@hil1mac40.cchem.berkeley.edu>
Source record: 115944

In article <37vqm6$17hu@yuma.ACNS.ColoState.EDU>,
greendot@lamar.ColoState.EDU (Robert Taylor) wrote:

> Hello I have an electronics project that i need to build. I want to build a
> 40 meter CW transmitter. The only one that i can find is in the ramsey cat
> alog, but it says that the coverage is 7.040 MHz and can be tuned to 7KHz
> around the XTAL frequency. I'm not familiar with the 40 meter but if I'm
> reading my info correctly for a techpluss operator I am allowed privilages
> on 7100 to 7150 KHz. If my math and info are correct this will not work
> for me! Any suggestions?
> Thanks Robert (KB0PED)

for another source of a 40m cw kit, you might try the northern california
qrp club (norcal). right now they are taking orders for their norcal-40.
if you want more info, send me mail and i'll try to get it for you.

bob (ka9mdp)

3020. Picture file of homebrew 2M packet radio & antenna in a.b.p group

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-18 18:20:14 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCxvs9t.8HK@netcom.com>
Source record: 115950
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

FWIW, I posted in the alt.binaries.pictures and a.b.p.misc groups a JPG picture file of my homebrew 2 meter indoor J pole antenna and a homebrew 2M radio (using the "guts" of a Motorola HT220 and an output RF amp to make 8 watts on packet). It's quite old, but it works well. Works better when I used a short length of "Ethernet" coax (equivalent to RG8U, 50 ohm) to feed the J pole.

The picture file is UUencoded, run uudecode to get the JPG file.
B&W photos with color labels, JPG quality around 65.

3021. Re: Screen Voltage Protection Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 00:40:09 UTC
From: ells22@aol.com
Message-ID: <381pt9$dsi@newsbf01.news.aol.com>
Source record: 115949

In article <1994Oct16.020953.23722@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) writes:

Gary, thanks for the ideas. I thought about using part of the plate capacity for the screen. At 750 volts, 100ma it must be regulated and then I have the problem of what happens when the plate voltage goes and the power supply has to bleed down the 5KV plate voltage froma 50microfarad cap. I don't know if the reaction time is fastr enough to save the tube. Do you have any info on that?

Thanks again de WA6CWV, Russ in Boise.

3022. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 04:44:59 UTC
From: carreiro@netcom.com
Message-ID: <carreiroCxwL70.7ut@netcom.com>
Source record: 115897

Bob Kehr (bkehr@garnet.berkeley.edu) wrote:
: for another source of a 40m cw kit, you might try the northern california
: qrp club (norcal). right now they are taking orders for their norcal-40.
: if you want more info, send me mail and i'll try to get it for you.
: bob (ka9mdp)

Slight correction here Bob. The "Norcal-40" is out of production and has
been for some time. The current project offered up is a multiband CW QRP
rig called the "Sierra". The designers of the "Sierra" have put the
engineering model rigs through massive amounts of pre-production testing
resulting in a very well thought out QRP rig. First run orders are closed
but I understand that subsequent order runs will be comming.

73 Paul, N6HCS
Northern California QRP Club Member

--
carreiro@netcom.com
N6HCS@N0ARY.#NOCAL.CA.USA.NA

3023. specs of Motorola (2N?)9038 and (2N?)8925

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 09:46:25 UTC
From: jf7wex@jf7wex.sdj.miyagi.prug.or.jp
Message-ID: <JF7WEX.94Oct19184525@tumtum.jf7wex.sdj.miyagi.prug.or.jp>
Source record: 115900
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

I would like to know npn/pnp distinction, absolute maximum ratings,
some important characteristics and pin connections of Motorola
transistors numbered as 9038 and 8925, used in power supply.
Please tell me.

Thanks in advance.
--
Ryuji Suzuki JF7WEX

3024. BPR2000 and Golay code

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 11:55:45 UTC
From: todd@wrtfac.day.cdc.COM
Message-ID: <400.9410191155@wrtfac.day.cdc.com>
Source record: 115883

I am working on building a transmitter controller for a Motorola "BPR 2000" Series display pager. I have some documentation from Motorola, but the paging format information lacks the detail I need to program the controller.

The first question is about the logic encoding. Is the carrier frequency just shifted to encode the ones and zeros? How much is the carrier shifted, and in what direction for a one or zero?

The next question is about the 18 preamble words. It is said that all 18 words are the same, and each word is 23 bits. Also that the preamble word is selected from a code set of ten. What are the ten preamble codes, and what part of the code plug number determines which of the ten is correct for a pager? Does the preamble word use the (23,12) Golay code, with 12 information bits and 11 parity bits?

The start code is made of two 23 bit words. What part of the code plug number determines the start code, and how is it encoded? Is the start code also 12 information bits, and 11 parity bits?

The address is also made of two 23 bit words. It would seem that part of the first 6 digits of the code plug number include the address. So how do you figure the address from the code plug number? Does the address use the (23,12) Golay, with 12 information bits, and 11 parity bits? If the address only has two words with 12 information bits each, then that is a total of 24 bits for the address, allowing a total of 16,777,215 addresses. The Motorola theory manual claims that only 400,000 address codes are possible, and this conflicts with what can be encoded into 24 bits. Even if they were using BCD in the 24 bits, that would allow 999999 possible addresses, so how did they come up with the 400,000 number?

Each pager has a 4-call capacity, with each call represented by one address. So each pager has 4 addresses. How are these determined? Which address is for "call 1" (tone-only source 1), "call 2" (tone-only source 2), "call 3" (tone & data source 1), and "call 4" (tone & data source 2)?

And then we have the data blocks of 8 words, 15 bits each. The data blocks use a (15.7) Bose, Chaudhuri, and Hocquenghem (BCH) code. What are the details of this BCH code? How many bits of information can be packed into 15 bits using BCH? How are the characters encoded? What characters are supported? (0-9,Abcd,space,dash)? Is the 1/2 bit space between data blocks always the opposite polarity of the next bit?

With the fields that use the (23,12) Golay format, how are the parity bits calculated?

The timing seems to be clear, 300 bits/sec for preamble, start, and address. With data and comma bits at 600 bits/sec. The one question I have is about

the 1/2 bit space before the data block, is that 1/2 of a 600 bits/sec, or 1/2 of a 300 bits/sec?

Todd Markley
email: todd.markley@cdc.com

3025. Re: Screen Voltage Protection Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 12:31:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct19.123108.12205@ke4zv.atl.ga.us>
Source record: 115875

In article <381pt9$dsi@newsbf01.news.aol.com> ells22@aol.com (ELLS22) writes:
>In article <1994Oct16.020953.23722@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us
>(Gary Coffman) writes:
>
>Gary, thanks for the ideas. I thought about using part of the plate
>capacity for the screen. At 750 volts, 100ma it must be regulated and then
>I have the problem of what happens when the plate voltage goes and the
>power supply has to bleed down the 5KV plate voltage froma 50microfarad
>cap. I don't know if the reaction time is fastr enough to save the tube.
>Do you have any info on that?

Use a shunt regulator. In the old days we'd use 5 VR-2 regulator
tubes in a series string, today an amplified zener circuit would
work. If the plate voltage dies, the screen voltage will decay
along with it. The only potential problem with this setup is a
shunt regulator failure. That would allow the screen voltage to
rise to near plate voltage. So you should choose the resistor to
limit screen current to a safe value if that happens.

```
------------------------------
| |
Plate --|--- R
Screen ---------x------|
| |
r Shunt reg
| |
GND GND
```

R is the shunt regulator resistor and r is a safety resistor that
takes over if the shunt regulator fails. It should be a fairly
high value so that it doesn't swamp the regulation in normal
operation.

Another way that's more modern is to use a sample of plate voltage
to drive a screen relay so that it pulls in only when plate voltage
is present. The screen supply can then be a separate supply.

```
dropping resistor R ----r----
Plate supply-------/\/\/\/\-|-)))))))|-Gnd
======
Screen supply---------------> |-------x--- to tube screen
| |
/ / tube
\ safety bleeder \ protection bleeder
/ /
| |
```

Gnd Gnd

Note: if the relay coil were to open, a potentially dangerous
condition could exist. Full plate voltage would appear on
part of the winding, and could arc over to the relay frame.
To mostly prevent that, bridge the coil with a high value
resistor to limit the potential across the coil to the ratio
of the safety resistor (r) to the dropping resistor (R).
Choose R so that with full plate voltage present, the current
draw will be correct for the relay to pull in. For a 20 ma
(nominal 600 ohm coil) relay, R would be about 250k for a 5kV
supply. Make r about 25k and no more than 500 volts can appear
if the relay coil opens. That should be pretty safe for most
relay insulation.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3026. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 17:58:15 UTC
From: rsk@uclink2.berkeley.edu
Message-ID: <rsk-1910940958150001@hil1mac40.cchem.berkeley.edu>
Source record: 115874

In article <carreiroCxwL70.7ut@netcom.com>, carreiro@netcom.com (Paul Carreiro) wrote:

> Bob Kehr (bkehr@garnet.berkeley.edu) wrote:
> : for another source of a 40m cw kit, you might try the northern california
> : qrp club (norcal). right now they are taking orders for their norcal-40.
> : if you want more info, send me mail and i'll try to get it for you.
> : bob (ka9mdp)
>
> Slight correction here Bob. The "Norcal-40" is out of production and has
> been for some time. The current project offered up is a multiband CW QRP
> rig called the "Sierra". The designers of the "Sierra" have put the
> engineering model rigs through massive amounts of pre-production testing
> resulting in a very well thought out QRP rig. First run orders are closed
> but I understand that subsequent order runs will be comming.
>
> 73 Paul, N6HCS
> Northern California QRP Club Member

Paul, you will find an announcement in the next QRPp that says orders are being taken for the Norcal-40 again (announcement and info has been coming out on packet). Production to begin in January. You are also right that another production run of the Sierra will likely take place in the future (according to Jim). I have already received confirmation of my Norcal-40 order.

Thanks and 73
Bob, New Northern California QRP Club Member

3027. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 18:00:04 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CxxM04.9to@news.Hawaii.Edu>
Source record: 115956

carreiro@netcom.com (Paul Carreiro) writes:

>Bob Kehr (bkehr@garnet.berkeley.edu) wrote:

>: for another source of a 40m cw kit, you might try the northern california
>: qrp club (norcal). right now they are taking orders for their norcal-40.
>: if you want more info, send me mail and i'll try to get it for you.
>: bob (ka9mdp)
>
>Slight correction here Bob. The "Norcal-40" is out of production and has
>been for some time.

Oops! Slight correction here Paul! The Norcal-40 version II is in
the works at this time. The announcement was made a couple weeks
ago on the QRP newsgroup. Price for this transceiver kit will be in
the $89 range. It will incorporate a good many of the improvements
and mods that the NorCal members invented.

Check the QRP email newsgroup for further details.

.73,
Jeff NH6IL

3028. Re: requesting opinion on handhelds

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 20:15:29 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <782597729snz@lfheller.demon.co.uk>
Source record: 115958

In article <37v24m$13u@u.cc.utah.edu> sinned@u.cc.utah.edu "Dennis Clark" writes:

> I have looked at several brands of handheld ham radios, and I have
> decided on getting either a Yaesu ft530, or a Kenwood th78a. Can anyone
> out there give their opinion of either one, or ups and downs of both? I'd
> also appreciate any other brands you might recommend, and your reason for
> recommending it.
> Thanks

I've had a TH78E for a couple of years (the European version) and I'm
quite happy with it. Having a broad-band front end the Rx overloads
in some environments with strong signals, even with the rubber
duck antenna! I don't really like the sliding cover for the keypad
and I see that they have dropped the idea for the TH78 replacement
that has just come out. I've played with the advanced features, but
don't really use them. I find the tone burst operation awkward - I
don't like the separate button and would prefer it on the PTT.

I've been told that the speech quality is very good with the built-in
mic, and even better with the SMC-33 hand-held mic.

You can set it up so that the Rx covers 50 MHz up to 950 MHz, with
scanner facilities, although this isn't in the manual. AM detection
is provided for the air band. It even has a couple of games programmed
into its ROM!

73, Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3029. 6 meter conversion

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 21:22:55 UTC
From: derekt@col.hp.com
Message-ID: <3842nf$nvr@hp-col.col.hp.com>
Source record: 115882

Has anyone converted commercial low band radios to amateur 6 meters?
GE Master II, Motorola Micors/Mitreks. What works and what doesn't?

Derek Toeppen
WA0ZTI
derekt@hp.col.com

3030. FREE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 23:21:34 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Oct19.232134.3718@grian.cps.altadena.ca.us>
Source record: 115892

FOR TRADE, OR ????

One Model 28 ASR Teletype, complete.
Includes spare Model 28 RO less cabinet
i.e. a spare printer mechanism with base.

The 28 ASR has a regular friction feed platen.
The 28 RO is equipped with a pin feed platen,
vertical and horizontal tab kits (was used to print
airline tickets). If you really want it I have the
Teleticketer (tm) control box - essentially a 300 baud
autoanswer modem with answerback and a loop current generator.

This unit has been in storage in the back of my garage for the last
5-6 years when the current owner moved from a house into an
apartment and asked if he could store it in my garage. I believe it
was working at that time. He has since lost interest in it, and told
me to get rid of it. Manuals _might_ be available - if any interest
is shown, I will put the prospective buyer in touch with the current
owner.
--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3031. Re: tuning circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-19 23:21:43 UTC
From: mike@io.org
Message-ID: <3849m8$j8b@ionews.io.org>
Source record: 115959

In article <380ckf$nb6@info2.rus.uni-stuttgart.de>,
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
>>I'm experimenting with a simple 'crystal radio circuit': coil in parallel with
>>a tuning cap from an am radio, germanium diode, lm2904 opamp.
>
>I am afraid you are grossly underestimating the requirements for a amateur
>band receiver, and even for simple AM broadcast reception.

I didn't expect this simple circuit to function as an amateur band receiver.
It *does* work for AM broadcast reception, and as I mentioned, I'm also able
to receive ~5-6Mhz.

What I'm trying to do for starters is just get a preselector circuit tuned
to a desired frequency range. I thought I would try using the crystal for
a tuning coil since I wasn't making much progress with creating a toroid/
cap combination.

I guess maybe investing in a couple of hundred (thousand ??) dollars worth
of test equipment might make it easier to construct a functional ~$100
receiver ;)

Mike
--
==
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==

3032. RF Design magazine

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 01:28:21 UTC
From: toorenburg_l@kosmos.wcc.govt.nz
Message-ID: <384do6$ojq@golem.wcc.govt.nz>
Source record: 115898

Is anybody able to give me subscription information for the magazine
RF DESIGN.

Leon Toorenburg ZL2ULG
toorenburg_l@kosmos.wcc.govt.nz

3033. Re: RF Design magazine

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 02:31:20 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <384kpo$2ui@usenet.rpi.edu>
Source record: 115871

toorenburg_l@kosmos.wcc.govt.nz wrote:

: Is anybody able to give me subscription information for the magazine
: RF DESIGN.

yep, I won't type in the whole bingo card, but here's their critical info

ARGUS BUSINESS
RF DESIGN
PO BOX 5286
PITTSFIELD MA 01203-9608

subscription inquiries 708-647-0756

-L , one of the best mags I get (even compared to the
ones I pay for!)

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

3034. xmitting on 2.4 GHz with Microwave Oven?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 05:41:03 UTC
From: vimx <vimx@delphi.com>
Message-ID: <5M2Wqsn.vimx@delphi.com>
Source record: 115886

Sounds frightening, doesn't it? I would think it's more dangerous to use
a regular transmitter because you'd be making microwaves more efficiently.
It would be a wild EME experiment, woudn't it?
Hypothetically, how would you connect the magnetron to an antenna, and
what kind of antenna would it be? A horn? If this is possible, legal, and
useful I think I might want to try it someday after I learn a lot more about
microwaves, but for now it's a lot of fun to think about.
Any thoughts or ideas on this?

3035. Re: xmitting on 2.4 GHz with Microwave Oven?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 08:51:38 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <385b2q$g84@usenet.rpi.edu>
Source record: 115961

vimx (vimx@delphi.com) wrote:
: Sounds frightening, doesn't it? I would think it's more dangerous to use
: a regular transmitter because you'd be making microwaves more efficiently.
: It would be a wild EME experiment, woudn't it?
: Hypothetically, how would you connect the magnetron to an antenna, and
: what kind of antenna would it be? A horn? If this is possible, legal, and
: useful I think I might want to try it someday after I learn a lot more about
: microwaves, but for now it's a lot of fun to think about.
: Any thoughts or ideas on this?

well, there was an article in 73 magazine a few years ago about
building an FMTV (amateur) transmitter with an oven. I think the guy
built a special coupler to tap out the energy (like maybe a homebrew
waveguide-> coax "de-launcher"). The problem cited in the article was
that the magnetron was not particularly stable. They're pretty
wideband.

He did suggest phase-locking the oven to something though :)!
-L

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

3036. Re: VLF Antenna Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 13:32:33 UTC
From: novatech@eskimo.com
Message-ID: <Cxz4AD.5vD@eskimo.com>
Source record: 115960

ka7oei@uugate.wa7slg.ampr.ORG writes:

>One word about E-field whips: I have a decent E-field whip and it works very
>well... provided that you are NOWHERE NEAR a powerline... Its frequency
>response extends into the KHz region (if I place it near an audio line, like
>one leg of a speaker wire...) I can hear what is being carried if I have
>the output of the antenna connected to a high-gain audio amp... but the
>OMEGA signals will drive you bananas, too...) If you are 'bent on building
>one of these, I would consult one of the several articles written in the
>past by Ralph Burhans that have appeared in 73 Magazine. HE knows of what
>he speaks! Again, they DO work well, but in urban environments, expect to
>hear a lot of noise... unless you are lucky... and no-one is using a
>light-dimmer in your neighborhood... Even then, you could use a
>synchronous noise-blanker, but thats another story...

><Clint>

>ka7oei@uugate.wa7slg.ampr.org

I tried a E-field whip to get WWVB at 60kHz and I'm two blocks from
a major power feed into Seattle-- you're right-- I couldn't get it
to work, while a 7.5 inch ferrite rod with 100 turns bifilar, resonated
at 60kHz was great. I also got too much of Jim Creek (NLK) at 24.8kHz
with the E-field.

The trick with e-field is that you need to have it higher than interfering
signals-- tough for me with a single story house and transmission lines.

--
Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303
Seattle, Washington 98102 USA

3037. Re: xmitting on 2.4 GHz with Microwave Oven?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 14:39:20 UTC
From: smasters@bzy.gmu.edu
Message-ID: <385veo$gq1@portal.gmu.edu>
Source record: 115962

vimx (vimx@delphi.com) wrote:
: Sounds frightening, doesn't it? I would think it's more dangerous to use

Not really. Most ovens have less power then the best HAM setups.

: Hypothetically, how would you connect the magnetron to an antenna, and
: what kind of antenna would it be? A horn? If this is possible, legal, and
: useful I think I might want to try it someday after I learn a lot more about
: microwaves, but for now it's a lot of fun to think about.
: Any thoughts or ideas on this?

How would you modulate the signal? CW might work if the magnetron can
be switched on and off fast enough.

73,
Shawn
KE4GHS

3038. Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 15:17:32 UTC
From: ve8ev@gov.nt.ca
Message-ID: <1994Oct20.151732.17084@gov.nt.ca>
Source record: 115890

I have several identical 2m amplifiers. Could anyone tell me how
feasable it would be to operate them in parallel using phasing cables
on the inputs and outputs similar to phasing two antennas?

Thanks,
==========
John Boudreau VE8EV INTERNET: ve8ev@amsat.org
Inuvik, NWT, CANADA PACKET: VE8EV@VE8YEV.#INU.NT.CA.NOAM
==========

3039. Ten-Tec Kits AT LAST!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 16:21:26 UTC
From: loase@iccgcc.cs.hh.ab.com
Message-ID: <1994Oct20.112126.1@iccgcc.cs.hh.ab.com>
Source record: 115963

I received my T-KIT 6 meter transverter yesterday.

first impresstions are
1. Not a Heathkit but very nice.
2. Good manual
3. skimped a little on the board
no solder mask
no plated through holes
but still a nice board.
4. Very complete kit
5. Nice looking metal silk screened cabinet
6. How in the world did they give me all this for $95.00

Best Regards
Jim Loase WD8RPT

3040. The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 17:10:07 UTC
From: burt@teleport.com
Message-ID: <38689f$mej@sandra.teleport.com>
Source record: 115891

I am having the greatest time discovering the secrets of this
gadget.

It's principal components are a razor blade and a pencil lead.

You wrap a coil (120 turns) around a toilet paper tube.
One end communicates with the antenna and the razor blade.
The other end communicates with the ground and the earphone.
the earphone sits between the pickup (pencil lead attached to a paper
clip) and the ground.

At present, all i can get is the same station at 970 KH, regardless of
the size of the coil, or the kind of razor blade.

It even works when it is *not* grounded! (Go Figure).

Would anyone care to elaborate on this subject, offer ideas for
improvement while keeping things primative, or share similar experiences
with similar types of receivers?

Thanks,

-burt
--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3041. Re: Microwave oven leakage?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 17:43:21 UTC
From: charnoft@wfu.edu
Message-ID: <386a7p$h0f@eis.wfunet.wfu.edu>
Source record: 115964

I once detected it with my walkman :)
Just play it without a tape and listen.

--
* * * * *
Olin Physical Lab | The more the pity that fools may not speak
Wake Forest University | wisely what wise men do foolishly.
Winston-Salem, NC | --Touchstone
KE4RJG |

3042. Re: Ramsey 40 meter coverage???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 21:29:22 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <CxzqCz.91q@wb6hqk.ampr.org>
Source record: 115966

In article 17hu@yuma.ACNS.ColoState.EDU, greendot@lamar.ColoState.EDU (Robert Taylor) writes:
> Hello I have an electronics project that i need to build. I want to build a
> 40 meter CW transmitter. The only one that i can find is in the ramsey cat
> alog, but it says that the coverage is 7.040 MHz and can be tuned to 7KHz
> around the XTAL frequency. I'm not familiar with the 40 meter but if I'm
> reading my info correctly for a techpluss operator I am allowed privilages
> on 7100 to 7150 KHz. If my math and info are correct this will not work
> for me! Any suggestions?
> Thanks Robert (KB0PED)

There are quite a few 40 meter transmitter kits available these days. Ramsey doesn't have the best reputation but I have built one of the 40 meter QRP transmitter kits you mention and found it to be well designed, easy to assemble and it generates an excellent signal. I think it's power output is only around 1/2 watt on a 12 volt battery however.

The transmitter frequency is controlled by a 7.04 MHz crystal pulled with a varactor circuit up and down about 20 kHz. The circuit board has provisions for a second crystal, including selection switch. The manual specs the crystal as parallel resonant with a 32 pf load capacitance (HC-6/U holder) but just about any modern 7 MHz crystal should be able to work. The manual suggests Jan Crystals (1 - 800 - JAN - XTAL) as a suitable vendor.

bart wb6hqk

bart@wb6hqk.ampr.org

3043. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-20 22:27:58 UTC
From: mack@ncifcrf.gov
Message-ID: <Cxzt2n.BDI@ncifcrf.gov>
Source record: 115965

In article <1994Oct20.151732.17084@gov.nt.ca> ve8ev@gov.nt.ca (John Boudreau) writes:
>I have several identical 2m amplifiers. Could anyone tell me how
>feasable it would be to operate them in parallel using phasing cables
>on the inputs and outputs similar to phasing two antennas?
>
I'm thinking of doing the same thing myself on 432 with tube amps.
If you do it I'd be glad to hear how it goes. I hope I'm not boring
you with the obvious, but the problems I've thought about is that with
tube amps, they are not likely to be identical (pahse shifts through input
and output circuits and fiddling to get each one tuned up). If you use
a combiner then the two rigs will interact as you tune them. If you
tune each for maximum smoke then you need two identical power meters
in each line. I don't know how different the phase shifts can be before
you get into trouble.

The other thought is to use hybrids to combine the power - the
amps don't interact and the unbalanced power dumps out one port and
can be watched with a power meter. This arrangement seems simpler
to tune. However if you extend it to four amps, it becomes a nightmare -
you need 3 hybrids on each side (input and output), while for the
combiner approach you only need a different combiner. I can't imagine
that you could tame 4 amps on combiners.

I have heard of people putting two tube amps together but
I don't know how easy they were to tune.

Good luck

Joe Mack NA3T

3044. low power fm short range xmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 02:04:18 UTC
From: jim_b@ix.netcom.com
Message-ID: <3877j2$qt5@ixnews1.ix.netcom.com>
Source record: 115869

Hi.

I am interested in information on short range fm transmitters. I have an application in mind that calls for transmitting up to 100 feet from the transmitter location, to be received on a radio such as a Walkman or similar FM radio. Stereo would be a nice plus, but it is not required. Also, if the only solution that satisfies requires building a device from scratch, this is acceptable.

I have tried several inexpensive commercial devices, but they are all unsatisfactory, in that the signal is loaded down with static or other noise.

If anyone has information that might be of help, please e-mail me at jim_b@netcom.com. I apologize for the fact that this is not quite an amateur radio topic, but I could find no better starting point. If anyone can suggest a better forum for this type of request, please let me know.

Thanks for your assistance!

3045. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 12:40:47 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct21.124047.22331@ke4zv.atl.ga.us>
Source record: 115777

In article <1994Oct20.151732.17084@gov.nt.ca> ve8ev@gov.nt.ca (John Boudreau) writes:
>I have several identical 2m amplifiers. Could anyone tell me how
>feasable it would be to operate them in parallel using phasing cables
>on the inputs and outputs similar to phasing two antennas?

That's not really feasible, the interaction will make tuning any
of the amplifiers an exercise in futility. The output of each
amp will be feeding into the output network of the others. That
way lies madness. You can use Wilkinson combiners and splitters,
but you'll still need some way of adjusting the phase of the signals,
otherwise you'll just be dumping power into the reject loads. Line
stretchers would work, or you could use lumped element networks.
The problem is that even identical amplifiers won't have the same
phase shift through them, and phase shift can change with varying
power levels, but the outputs need to be in phase to combine
constructively, so you have to have adjustable phasing to get
them all to the same phase at a given frequency and power level.
Most broadcast transmitters today are built up from a bunch of
modules combined in that fashion.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3046. Re: The Little Razor Blade Radio

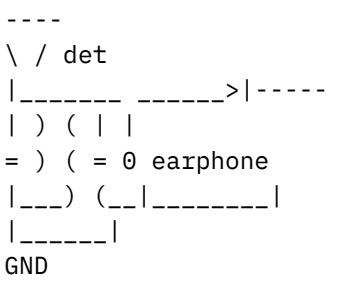
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 13:12:21 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct21.131221.22475@ke4zv.atl.ga.us>
Source record: 115907

In article <38689f$mej@sandra.teleport.com> burt@teleport.com (Burt Keeble) writes:
>I am having the greatest time discovering the secrets of this
>gadget.
>
>It's principal components are a razor blade and a pencil lead.
>
>You wrap a coil (120 turns) around a toilet paper tube.
>One end communicates with the antenna and the razor blade.
>The other end communicates with the ground and the earphone.
>the earphone sits between the pickup (pencil lead attached to a paper
>clip) and the ground.
>
>At present, all i can get is the same station at 970 KH, regardless of
>the size of the coil, or the kind of razor blade.
>
>It even works when it is *not* grounded! (Go Figure).
>
>Would anyone care to elaborate on this subject, offer ideas for
>improvement while keeping things primative, or share similar experiences
>with similar types of receivers?

Burt, the tuning of your design depends on the electrical length of
the antenna and the inductance of the loading coil. To change frequency,
you have to change either the length of the antenna, or the inductance
of the coil. There are several ways to do the latter. Inserting ferrous
metal into the coil tube will increase the inductance, or inserting
brass will lower it. You can place taps on the coil and switch them.
You can sand off the insulation in a line and use a slider contact
to tune the coil. Etc.

All of these approaches are "classic" but none of them offer much
selectivity. As you've discovered, a strong local signal will still
dominate the equipment no matter how you alter the tuning. To get
better selectivity, you'll need to resonate the coil and form a
loose coupler by winding an identical coil on the form and
resonating it as well. By varying the spacing of the two coils
on the form, you can make the coupling tighter or looser. The
looser the coupling, the sharper the selectivity you will have.
(the razor blade detector goes in the secondary circuit.) But
of course, the looser the coupling, the weaker the signal will
be at the detector. You may want to advance to a more sensitive
detector, such as a galena detector or an electrolytic detector.
The latter is a metal cup containing lemon juice with a cat's
whisker dipped in it and pulled up to form a meniscus. That's
about as sensitive a detector as you can make without getting

into vacuum tubes or solid state devices.



If you make the coils variable, you can form the capacitors out of alternating layers of aluminum foil and wax paper. You can tune them a bit by making a screw clamp to tighten or loosen the stack. Or you can make your own air variable capacitors out of metal disks. Brass washers cut in half make good capacitor plates, copper would be even better. One set would be fixed, and the other set soldered to a shaft.

You can also experiment with tapping the antenna and the detector up or down on their respective coils. this will be an attempt to better match the impedances for better power transfer.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3047. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 13:24:24 UTC
From: no0t@fns.COM
Message-ID: <9410211230.AA27022@fns.com>
Source record: 115873

SUBSCRIBE

Paul Sobon no0t@fns.com
Fujistu Network Switching Amateur Radio: NO0T
Raleigh, NC 27609
(919)-790-2596

3048. Re: Ten-Tec Kits AT LAST!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 15:26:14 UTC
From: jholly@cup.hp.com
Message-ID: <Cy147r.HpL@cup.hp.com>
Source record: 115774

loase@iccgcc.cs.hh.ab.com wrote:
: I received my T-KIT 6 meter transverter yesterday.

: first impresstions are
: 1. Not a Heathkit but very nice.
: 2. Good manual
: 3. skimped a little on the board
: no solder mask
: no plated through holes
: but still a nice board.

Just like the boards in the factory built xcvr's. Why should they
be different on the kit?

: 4. Very complete kit
: 5. Nice looking metal silk screened cabinet
: 6. How in the world did they give me all this for $95.00

: Best Regards
: Jim Loase WD8RPT

3049. UHF portable trans. & receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 17:47:16 UTC
From: gpasupat@ee.ryerson.ca
Message-ID: <388ur4$143h@hermes.acs.ryerson.ca>
Source record: 115785

Hi:

I'm new to this newsgroup. Can someone direct me in the direction of
building a 150 Mhz, AM-single tone transmitter and the accompanying receiver.

Ganesh

e-mail: gpasupat@ee.ryerson.ca

3050. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-21 23:30:29 UTC
From: pouelle@uoft02.utoledo.edu
Message-ID: <Cy1qMt.Ly9@utnetw.utoledo.edu>
Source record: 115780

In article <37nbd6$g5g@abyss.West.Sun.COM>, myers@Cypress.West.Sun.Com (Dana Myers) writes:
>In article 9971@ultb.isc.rit.edu, jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
>>
>>I have a few projects in mind that use a MPF-102 for pre-amps on
>>2-meters and 440. Are there any newer parts that have better gain
>>or less noise? The Motorola RF Device book doesn't list substitutes
>>for the MPF102.
>
>I'd recommend the J308/309/310 family for 2m/70cm pre-amp use. A J310
>is certainly superior to an MPF102 in these applications. However, you
>may need to adjust the circuit to the different specs of the J310 (have
>a look at the data sheets). A 2N4416 is essentially identical to an
>MPF102, and may be easier to find.
>
>---
> * Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
> * (310) 348-6043 | mine and do not necessarily *
> * Dana.Myers@West.Sun.Com | reflect those of my employer *
> * "Antenna waves be burnin' up my radio" -- ZZ Top *
>
>
Easier to find???? My local Radio Shack carries MPF102s in stock. A bit
on the expensive side, but real easy to find.

Patrick
KB8PYM
pouelle@uoft02.utoledo.edu

3051. MILLWATT reprint status

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 04:04:15 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct22.000415.23596@wb3ffv.wb3ffv.ampr.org>
Source record: 115880

Forthe benefit of those QRPers who expressed interest but are no longer subscribed to the QRP mailing list: Bill takes the pile to UPS on Monday. There are many people who expressed interest but never followed up; others said a check is in the mail but it was never received. I'll post a list of names soon so you can firm up your reservation if you wish. 73 and Queue Our Pea DE WA8MCQ

3052. MILLIWATT reprint status

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 13:44:59 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Oct22.094459.13387@wb3ffv.wb3ffv.ampr.org>
Source record: 115879

For the benefit of the QRPers who unsubscribed from the qrp mailer--the reprints of The Milliwatt go to UPS on Monday, or so N8ET tells me. If you have not received an e-mail from me telling you that you are paid up, let me know immediately; there are lots of folks with reserved copies, and those will go on the open market soon if not claimed (ie, paid for). 73 and Queue Our Pea DE WA8MCQ

3053. a

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 18:41:47 UTC
From: umar@tiac.net
Message-ID: <umar.2.000FBF9F@tiac.net>
Source record: 115877

a

3054. INDUCTANCE MEASURING

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 20:09:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9410221823052115@kbsbbs.com>
Source record: 115881

RJ>QST

RJ>Can anyone give me some advice on a good piece of equipment for
RJ>measuring inductances. I have an LCR meter (LCR 195) which I
RJ>purchased from Alpha Elec. several years ago. This meter works great
RJ>for measuring capacitance but just doesn't get it for measuring small
RJ>inductances (uh range).
RJ>Tnx for the help.

RJ>de nz4i Randy

Greetings Randy:

Take a look at the AUTEK RF-1 ANTENNA BRIDGE. It may do the job
for you. AUTEK advertizes in QST.

73
Tom

****
Best Wishes,
T.M. Alldread
R.R.#4, Site 430, C7
Courtenay, B.C., Canada, V9N-7J3
INTERNET : tom.alldread@kbsbbs.com
packet radio: VE7TMA@VE7UBC.#VANC.BC.CAN.NA
Tel.(604)337-5577
**
---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3055. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 21:11:35 UTC
From: burt@teleport.com
Message-ID: <38bv67$isq@sandra.teleport.com>
Source record: 115876

lengthy post deleted to save bandwidth.

I got several pieces of e-mail, and saved Gary's post for further experimentation.

Anyone else have any ideas? Or want to talk about powering the thing up using lemons for batteries? Or stuff like that?

Thanks for your post gary, I'll try some of the things you suggested. I just think it's neat to make something marvelous out of virtually nothing. :)

-burt

--

"We are all descended from a long line of determined, resourceful, microscopic tadpoles--champions every one." K.V.

3056. Re: Ham-Homebrew Digest V94 #311

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-22 23:28:41 UTC
From: sphillip@nyx10.CS.du.EDU
Message-ID: <Pine.SUN.3.90.941022172823.10061B-100000@nyx10>
Source record: 115878

```
unsubscribe ham-homebrew
```

3057. Decoding Digital Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-23 21:46:39 UTC
From: starin@netcom.com
Message-ID: <starinCy5B5r.LqM@netcom.com>
Source record: 115884

I am wondering if anyone in this newsgroup would know of a method for capturing digital data in the airwaves and piping it into a computer Soundblaster card for analysis.

Any help much appreciated.

Please feel free to contact me directly by e-mail, or post here for the benefit of others who may want to know same.

Thanks
--
Jeffrey
{New York}

3058. FS:44' telescopic mast $45

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-23 22:32:35 UTC
From: krispy@bga.com
Message-ID: <38eoa3$7pn@lia.bga.com>
Source record: 115885
Cross-posted to: rec.radio.amateur.homebrew,misc.forsale

44 foot hot galvinized steel tubing telescoping mast. can be adjusted in length from 10' to 44'. has 5 sections, each segment has hand clamp and attachment points for 4 guy wires. base segment is 2.25"od top segment is 1.25"od. each segment has provisions for being pinned at max extension.

this is a heavy unit so shipping is likely going to be expensive.
delivery possible in Texas.

kris

3059. RF Printed Circuit Board layout design?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 04:05:11 UTC
From: srussell@iconz.co.nz
Message-ID: <38fbpp$3lc@status>
Source record: 115887
Cross-posted to: sci.electronics.repair,sci.electronics,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,alt.radio.pirate,alt.radio.digital,alt.radio.uk,aus.radio,

Hi. I'm hoping somebody out there could recomend a book or books on
layout design of printed circuit boards for RF circuits.

Please reply via e-mail.

Thanks for your help.

Russell.

+---+
::: Russell Smiley :::
::: srussell@iconz.co.nz :::
::: 'Now there's a hoopy frood who really knows where his towel is!' :::
::: Hitch-hiker's Guide to the Galaxy :::
+---+

3060. Re: xmitting on 2.4 GHz with Microwave Oven?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 05:54:55 UTC
From: fspinner@interaccess.com
Message-ID: <fspinner.3.0056AB57@interaccess.com>
Source record: 115889

In article <5M2Wqsn.vimx@delphi.com> vimx <vimx@delphi.com> writes:
>From: vimx <vimx@delphi.com>
>Subject: xmitting on 2.4 GHz with Microwave Oven?
>Date: Thu, 20 Oct 94 00:41:03 -0500

> Sounds frightening, doesn't it? I would think it's more dangerous to use
>a regular transmitter because you'd be making microwaves more efficiently.
>It would be a wild EME experiment, woudn't it?
> Hypothetically, how would you connect the magnetron to an antenna, and
>what kind of antenna would it be? A horn? If this is possible, legal, and
>useful I think I might want to try it someday after I learn a lot more about
>microwaves, but for now it's a lot of fun to think about.
> Any thoughts or ideas on this?

A magnetron has a coaxial output. It is possible to use a coax to wave-
guide transition (1/4 wavelength on one side to short and >1/4 on other
to open)

Feed this to a dish and you probably would have enough EIRP to fry passing
fowl.

Magnetrons are very noisy (phase noise) though and probably not too stable.
There are probably other devices that are more appropriate for use at
2.4 GHz.

Fred M. Spinner (KA9VAW)
fspinner@interaccess.com

3061. Re: SWR between transmitter and amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 11:55:36 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38g7bo$lur@info2.rus.uni-stuttgart.de>
Source record: 115893

>Question (not a trick question, I really want to know!): Where does
>all the reflected power from the transmitter go?

Tom,
Supposing the tuner of the ts440 works OK, which it surely does
the power will be reflected by the tuner back foreward into the amplifier.
There part of it will be amplified and some will be re-reflected....
So the standing waves on the line, as in the combination tuner-antenna.

73, Moritz DL5UH

3062. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 12:02:22 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38g7oe$ric@info2.rus.uni-stuttgart.de>
Source record: 115894

>I have several identical 2m amplifiers. Could anyone tell me how
>feasable it would be to operate them in parallel using phasing cables
>on the inputs and outputs similar to phasing two antennas?

John,

Despite the problems with adjusting phase and using a proper
output combiner, it is widely done with VHF and UHF hybride
amplifier modules and also with TWT's on 3cm.

Sucess! Moritz DL5UH

3063. RE: Local Radio Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 13:19:00 UTC
From: MUENZLERK@CR.MSMAIL.UTHSCSA.EDU
Message-ID: <01HINC9KS2GY002XM9@uthscsa.edu>
Source record: 115895

> Hey all. A friend of mine has been enduring Country AND Western music
>at work for about as long as he can stand. Are there any pre-existing
>files on building a mono-frequency, low-power jammer? Proximity could be
>as far as 30' away, or closer if necessary. Any covering signal would
>be nice (from dead-air to killer decibels) but cost and ease are our
>main concerns.
>
> If you could point me to a FTP site, or some such, I am capable of
>doing the rest, most likely.
>
> Thanks!
>
>Ken Kopin

I wouldn't try it Ken. For one thing it wouldn't be too cool for your
workers,
also it is ILLEGAL! You can get yourself into some deep, hot doodoo for
intentionally jamming commercial (or amateur) signals/broadcasts. Not only
would
you loose your ham ticket (if you have one) but you could spend time in
prison
and have some hefty fines levied upon you. Just do what I did, buy a small
pocket
radio or cassette/8track/CD or whatever with headphones.

73

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

Liberals measure compassion by how many people they are helping.
Conservatives measure compassion by how many people no longer need
their help.
--Rush Limbaugh

| I am Voltohm of Borg!
| Resistance is E/I!

```
| Power is EI!
**********************************************************************
```

3064. Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 15:26:36 UTC
From: mack@mails.imed.COM
Message-ID: <9409247830.AA783016585@mails.imed.com>
Source record: 115904
Body handling: HTML body converted to readable text

In digest #313:

3065. Farinon TR 2000 info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 16:07:08 UTC
From: pgerba@crl.com
Message-ID: <38gm3c$g9p@crl6.crl.com>
Source record: 115896

I'm looking for a schematic or service manual for a Farinon TR 2000 (TR 2000S-02) repeater.

Thanks.

pete, kn6bi

415-864-3165

pgerba@crl.com

3066. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 18:21:00 UTC
From: <>
Message-ID: <38gtuc$e49@male.EBay.Sun.COM>
Source record: 115899

In article D54@cruzio.com, stan@cruzio.com writes:
.>> >I have several identical 2m amplifiers. Could anyone tell me how
.>> >feasable it would be to operate them in parallel using phasing cables
.>>on the inputs and outputs similar to phasing two antennas?
.>
.>
.>Why can't you avoid the problem on the output side by feeding 2 separate
.>antennas?
.>
.>--
.>Stan Goldstein , N6ULU

Use a pair of quadrature hybrid branch line couplers, one on the input
and one on the output. Be sure the terminating resistor on the fourth port
of the output hybrid can handle the power dissipation that will result from
any impedance mismatch the output sees.

Ray Anderson WB6TPU

3067. Q: Need help on simplified Receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 18:45:34 UTC
From: browere@einstein.cnrs.humboldt.edu
Message-ID: <9410241842.AA00913@einstein.cnrs.humboldt.edu>
Source record: 115901

I have been reading the AARL Handbook, but alas, I am not understanding
everything the first time (or times!) through (no surprise, right...).

Could someone provide me with the schematics for a SIMPLE fm receiver
indicating which values of inductors and capacitors could be changed
to tune various frequencies? If I am just missing it, a page number
(perhaps with a simplified explanation) would be great. Must be simple.

In particular, I am looking to receive an UHF frequency (460.250 mHz)
and other freq.s around there as a learning project.

Thank you all, in advance, for your help! It is tough on the beginning...

Eric
(browere@einstein.cnrs.humboldt.edu --Ignore above address...)

3068. Kenwood TS-140/680 Serial Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 20:18:42 UTC
From: hbrown@nadir.resd
Message-ID: <1994Oct24.201842.9459@knight.vf.ge.com>
Source record: 115905

I'm looking for a serial interface circuit (homebrew, commercial, or just a schematic) for a Kenwood TS-140 or TS-680 (I beleive they are they same). Any info will be appreciated.

73, Harry, W3IIT
hbrowqn@resd.vf.ge.com

3069. Re: Looking for MPF102 replacement

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 20:54:30 UTC
From: frederick.mckenzie-1@kmail.ksc.nasa.gov
Message-ID: <frederick.mckenzie-1-2410941654300001@k4dii.ksc.nasa.gov>
Source record: 115902

In article <Cy1qMt.Ly9@utnetw.utoledo.edu>, pouelle@uoft02.utoledo.edu wrote:
> In article <37nbd6$g5g@abyss.West.Sun.COM>, myers@Cypress.West.Sun.Com
(Dana Myers) writes:
> >In article 9971@ultb.isc.rit.edu, jdc3538@ultb.isc.rit.edu (J.D.
Cronin) writes:
> >>I have a few projects in mind that use a MPF-102 for pre-amps on
> >>2-meters and 440.
....
> >a look at the data sheets). A 2N4416 is essentially identical to an
> >MPF102, and may be easier to find.
....
> Easier to find???? My local Radio Shack carries MPF102s in stock.

Patrick, Dana & J.D.-

My recollection of the MPF102, is that it isn't very good at 400 MHz, while the 2N4416 is. The 2N4416 is a Mil-Spec part, so it may be available from surplus parts sources. Even if the MPF102 is easier to get, it isn't nearly as good a choice at 440. The 2N4416 has tighter specs, but it is close enough that there should be no circuit changes needed for the substitution.

73, Fred, K4DII

3070. FREE - scrounged electronics gear

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-24 23:42:29 UTC
From: mod@world.std.com
Message-ID: <Cy7B6t.6L2@world.std.com>
Source record: 115903
Cross-posted to: athena.forsale,ne.forsale,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap,wstd.forsale

Tonight I rescued the following items from some lady's front
yard where she was preparing them (with regrets) to be tossed.
I gather that they belonged to a now-gone husband or son.
Condition of the items is unknown, though I can say that I see
no obvious defects except the amp is missing a tube. I haven't
even powered them up and don't intend to. If you want one piece
I wish you'd take all three. Pickup in Chelmsford or Cambridge:

- Knight KG686 RF generator
- Knight KG688 Sine/Square wave generator
- Heathkit W4B amplifier

Regards,

Michael O'Donnell mod@std.com

3071. Re: microwave oven transmitter!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 01:07:48 UTC
From: dmiller@crl.com
Message-ID: <38hlp4$hod@crl4.crl.com>
Source record: 115906

Tyler Harpster (TJH112@psuvm.psu.edu) wrote:
: I once heard of a guy using the guts of a microwave oven to transmit his own
: tv signals to a homemade receiver designed to recieve at that frequency.
: PEP was something like 600 watts because of the size of the oven used.
: Obviously this is not the sort of transmitter you want to stand in front of.
: Anyone have any ideas as to how to carry this out? Tyler. N3SPD

This guy was a runner-up in RF Design magazine's yearly design contest
a few years back. I don't remember which issue featured this guy's work,
but you could do some research at your nearest technical library and find
out...

--

Don Miller My opinions are my own!
dmiller@crl.com

3072. Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 01:51:47 UTC
From: CC015012@brownvm.brown.edu
Message-ID: <38hoc0$sr0@cat.cis.Brown.EDU>
Source record: 115908

Hi,

I've added some aluminum right angle profiles to an amplifier I have in an attempt to beef up the heat-sinking capacity. The Al profiles are not coated. Will it make much difference if I paint them black ?

(I have one source, Tremaine, saying the "emissisivity" of plain Al is 0.05 and for black painted: 0.8. This seems like such a huge step. Couldn't find anything on this in the ARRL but maybe I flipped the pages too fast ? Also, I've seen plenty of Al headsinks with a golden finish and now I wonder :-)).

thanks,
john

3073. Requesting tunnel diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 04:10:56 UTC
From: wmbrnd@mailserv.mta.ca
Message-ID: <wmbrnd.1.00086BD0@mailserv.mta.ca>
Source record: 115916

Hello Everyone,

I was wondering if anyone knew of a place in North America that
sold tunnel diodes (preferrable with an 800 number) that sells tunnel diodes,
or if you had any that you wouldn't mind parting with (for a nominal fee of
course :)). I appreciate any replies and please e-mail me as our newsrdr
server is about 10 days behind. It sucks...

Bill

"If everyone all around the world joined hands,
75% of them would drown."
Unknown (75% chance he/she drowned)

3074. Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 05:37:25 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <38i5il$8d8@franklin.cc.utas.edu.au>
Source record: 115909

Hello All,

I am building a (fairly) simple direct conversion SSB receiver
for the 80m amateur band to test out some ideas using a 74HC4046
PLL before building a more general coverage receiver.

My question relates to impedence matching at the front end.
I would like to use a BP or LP filter. I assume that the input
impedence of the filter should match the antenna impedence, or
else I should use a balun.

With the filter I'm using the output impedence is the same as the input
impedence. The first active device in the receiver is a jFET which
has a high impedence.

So, can the filter output be connected to the input of the jFET with some
series capacitance, or does the filter output require some form of load
to operate into efficiently, and if so, how is this achieved?

I look forward to any advice, thanks, Ian

3075. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 05:51:09 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <38i6cd$1c5@chnews.intel.com>
Source record: 115910

In article <9409247830.AA783016585@mails.imed.com>,
<mack@mails.imed.COM> wrote:

>This pulse has -2/3 volt of
>amplitude which dissipates its energy in the 50 Ohm impedance of the
>transmitter. Since the Transmitter impedance matches the impedance
>of the coax, no energy is sent back to the load. >Ray Mack >WD5IFS

Hi Ray, If the transmitter impedance is 50 ohms and the load is 50 ohms,
then a 100w input transmitter will deliver no more than 50w to the load.
Yet we know that a 100w input class C amplifier will deliver much more
than 50w to the load. How do you explain that?
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3076. Re: specs of Motorola (2N?)9038 and (2N?)8925

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 10:43:55 UTC
From: randolph@est.enet.dec.com
Message-ID: <38j5ho$giq@mrnews.mro.dec.com>
Source record: 115914
Cross-posted to: sci.electronics,rec.radio.amateur.homebrew

In article <JF7WEX.94Oct19184525@tumtum.jf7wex.sdj.miyagi.prug.or.jp>,
jf7wex@jf7wex.sdj.miyagi.prug.or.jp (Ryuji Suzuki) writes...
>I would like to know npn/pnp distinction, absolute maximum ratings,
>some important characteristics and pin connections of Motorola
>transistors numbered as 9038 and 8925, used in power supply.
>Ryuji Suzuki JF7WEX

Sounds like date codes - 90 and 89 are the year, and the last two digits are
usually the week number.

What other numbering is on the transistors?
-Tom R. N1OOQ randolph@est.enet.dec.com

3077. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 11:15:24 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38ipcc$2v5a@info2.rus.uni-stuttgart.de>
Source record: 115911

> Your suspicion is correct! Some of the power that is reflected turns
>into heat in the TS440s.

Well actually only a *very* small fraction. Since the WSWR is reasonable
in the given example, the internal matching NW of the trx will re-reflect
most of it foreward into the load.

BTW, even if operating a typical transistor amplifier into an
unmatched load, it will re-reflect most of the returning power.

>If the transmitter is not matched to the line and neither is the load, you
>will have pulses running back and forth down the line until all the energy is
>dissipated.
>
>Ray Mack

Again, only if the reflectivity of the load is very high, i.e.
a VSWR of 10:1 or roundabout. Else most power is likely to find
its way into the load eventually.

Moritz DL5UH

3078. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 12:17:41 UTC
From: lascal@magritte.its.rpi.edu
Message-ID: <38it15$661@usenet.rpi.edu>
Source record: 115917

Cecil_A_Moore@ccm.ch.intel.com wrote:
: In article <9409247830.AA783016585@mails.imed.com>,
: <mack@mails.imed.COM> wrote:

: >This pulse has -2/3 volt of
: >amplitude which dissipates its energy in the 50 Ohm impedance of the
: >transmitter. Since the Transmitter impedance matches the impedance
: >of the coax, no energy is sent back to the load. >Ray Mack >WD5IFS

: Hi Ray, If the transmitter impedance is 50 ohms and the load is 50 ohms,
: then a 100w input transmitter will deliver no more than 50w to the load.
: Yet we know that a 100w input class C amplifier will deliver much more
: than 50w to the load. How do you explain that?

The full power is being transferred, however the voltage does
drop across the load, by 3db. If one were to measure the open circuit
voltage of the source, one would see a voltage higher than that seen
when the load was attached (since no load is attached, note that no
power is being delivered to anything). That doesn't mean that power
is being dissipated in the source, but that there is a source
impedance of 50 ohms.

anyway... I hope this helps to some degree. I guess it all
depends on how you make your measurements...
current/voltage/power/impedance
-Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

3079. Siliconix DV28120V wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 13:01:34 UTC
From: joe@neurose.uet.e-technik.th-darmstadt.de
Message-ID: <38ivje$c0i@rs18.hrz.th-darmstadt.de>
Source record: 115912

Hello,

the subject says all. I am looking for a DV28120V FET which should be produced by Siliconix, but the local Siliconix dealers don't now this transistor. It is a dual VHF power FET which is capable of about 120W HF output. If someone has such a part or even knows where to get it please send me a mail.

Thanks in advance

Joachim

Joachim Danz, Technische Hochschule Darmstadt
Institut fuer Uebertragungstechnik und Elektroakustik
Merckstrasse 25, D-64283 Darmstadt
Tel: ++49 6151/162269; Fax: ++49 6151/5545
Email: j.danz@uet.th-darmstadt.de

3080. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 14:13:55 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.783094435@aries>
Source record: 115913

mack@mails.imed.COM writes:
>pulse example is easier to follow in my opinion.

I think it leads you to the wrong conclusion tho.

>amplitude which dissipates its energy in the 50 Ohm impedance of the
>transmitter. Since the Transmitter impedance matches the impedance of the coax,
This is the part that bothers me. Walt Maxwell says the output power is
simply reduced by the mismatch and that no power is "dissipated" in the
source. I like that better.

>If the transmitter is not matched to the line and neither is the load, you will
>have pulses running back and forth down the line until all the energy is
>dissipated. This is exactly what causes ringing in digital circuits!

>I hope this explanation is helpful.

Well, actually it is. Gets one to think about it again.

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

3081. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 15:15:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct25.151508.2124@ke4zv.atl.ga.us>
Source record: 115769

In article <Cy6t87.D54@cruzio.com> stan@cruzio.com writes:
>> >I have several identical 2m amplifiers. Could anyone tell me how
>> >feasable it would be to operate them in parallel using phasing cables
>> >on the inputs and outputs similar to phasing two antennas?
>
>
>Why can't you avoid the problem on the output side by feeding 2 separate
>antennas?

That generates a different set of problems. Now you're operating
a phased array with a pattern that's dependent on the different
phase/frequency responses of the two amplifiers. That may be
undesirable for a number of reasons, not the least of which is
that it may direct your 3db increased signal in a direction
such that the desired destination station receives 7, 9, 13,
20 or more db less signal depending on the exact pattern that's
established. *And* now your system is not reciprocal unless you
can find a suitable way to combine the signals from those antennas
with the same relative phasing to feed your receiver.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3082. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 15:33:07 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct25.153307.2220@ke4zv.atl.ga.us>
Source record: 115770

In article <9409247830.AA783016585@mails.imed.com> mack@mails.imed.COM writes:
>
>This returns a 1 ns pulse back toward the transmitter which arrives back there
>2.54 microseconds after you sent out the pulse. This pulse has -2/3 volt of
>amplitude which dissipates its energy in the 50 Ohm impedance of the
>transmitter. Since the Transmitter impedance matches the impedance of the coax,
>no energy is sent back to the load.

You've fallen into a common error, Ray. An active transmitter is not a
dissipative load, 50 ohms or otherwise. There's no resistor inside its
output port waiting to absorb the pulse. As I covered in another post,
the pulse will be effectively totally reflected from the working transmitter,
neglecting circuit losses. The output impedance of a working transmitter
is simply the *loadline* (E/I) of the output stage, transformed in impedance
by the output network to appear to be 50 ohms at the output connector. In no
way is it actually a physical resistance. All of the RF energy eventually
is absorbed by the actual load, perhaps after many reflections if the
mismatch is great, just like circulating currents in a tank circuit, or
dissipated in circuit and cable losses. It is *not* dissipated in the
output impedance of the transmitter. An output impedance is not equal
to an input resistance looking back into a working transmitter's output
port. Remember, power can only be dissipated in a real resistance.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3083. >>> FOR SALE >>> THREE SECTION TELESCOPING MAST 36' AND DIAMOND X-50 2M/440 ANTENNA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 15:52:17 UTC
From: johanson@ix.netcom.com
Message-ID: <38j9jh$b65@ixnews1.ix.netcom.com>
Source record: 115915
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.swap

>>> FOR SALE >>> THREE SECTION TELESCOPING MAST 36' AND DIAMOND X-50 2M/440 ANTENNA

THREE SECTION TELESCOPING MAST, 36', GALVANIZED, PRICE $40 + Shipping

DIAMOND X-50, 2 METER & 440 MHZ DUAL BAND ANTENNA, PRICE $80 + Shipping

David (415) 941-3444

3084. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 16:57:58 UTC
From: tomb@lsid.hp.com
Message-ID: <Cy8n4n.CEI@hpcvsnz.cv.hp.com>
Source record: 115768

stan@cruzio.com wrote:
: > >I have several identical 2m amplifiers. Could anyone tell me how
: > >feasable it would be to operate them in parallel using phasing cables
: > >on the inputs and outputs similar to phasing two antennas?

: Why can't you avoid the problem on the output side by feeding 2 separate
: antennas?

Because this simply pushes the problem from one place to another: though the amplifiers might not "complain", you won't get the radiation pattern you want unless the antenna _system_ is properly constructed and fed. Two arbitrary antennas fed in arbitrary phase will get you a very strange pattern most likely.

3085. Re: Local Radio Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 18:25:27 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <38jiin$1ueo@yuma.ACNS.ColoState.EDU>
Source record: 115771

Muenzler, Kevin (MUENZLERK@CR.MSMAIL.UTHSCSA.EDU) wrote:

If the above didn't scare you off! The only ftp site that might have what
you are looking for (or post for it is) ftp.spies.com or something like that
you could look it up in the archie server. If you can't find anything drop
me some mail and i'll see what info i can come up with.
Glad to help
Robert

3086. HAM*INFO*LINK*SOURCE BBS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 19:15:47 UTC
From: kb6axk@netcom.com
Message-ID: <kb6axkCy8tIB.KCA@netcom.com>
Source record: 115772

new amateur radio "ham" bbs at 818-584-1952
73 & 88 de kb6axk,joe

--
US AMATEUR RADIO |sysop of the HAM*INFO*LINK*SOURCE BBS|
KB6AXK | at 1-818-584-1952,joe cira |
PASADENA,CAL,91107| kb6axk@netcom.com |

3087. Re: Decoding Digital Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 20:07:52 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <783115672snz@lfheller.demon.co.uk>
Source record: 115813

In article <starinCy5B5r.LqM@netcom.com>
starin@netcom.com "Jeffrey Starin" writes:

> I am wondering if anyone in this newsgroup would know of a method for
> capturing digital data in the airwaves and piping it into a computer
> Soundblaster card for analysis.
>
> Any help much appreciated.
>
> Please feel free to contact me directly by e-mail, or post here for the
> benefit of others who may want to know same.

I don't know about the SB, but some amateurs are using the Cardinal
PRO16 and similar sound cards based on the Analog Devices ADSP-2115
DSP for PACTOR - HF packet radio.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3088. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 20:29:27 UTC
From: zlau@arrl.org
Message-ID: <1994Oct25.202927.19602@arrl.org>
Source record: 115773

Gary Coffman KE4ZV (gary@ke4zv.atl.ga.us) wrote:
: In article <Cy6t87.D54@cruzio.com> stan@cruzio.com writes:
: >> >I have several identical 2m amplifiers. Could anyone tell me how
: >> >feasable it would be to operate them in parallel using phasing cables
: >> >on the inputs and outputs similar to phasing two antennas?
: >
: >
: >Why can't you avoid the problem on the output
:> side by feeding 2 separate
: >antennas?

: That generates a different set of problems. Now you're operating
: a phased array with a pattern that's dependent on the different
: phase/frequency responses of the two amplifiers. That may be
: undesirable for a number of reasons, not the least of which is
: that it may direct your 3db increased signal in a direction
: such that the desired destination station receives 7, 9, 13,
: 20 or more db less signal depending on the exact pattern that's
: established. *And* now your system is not reciprocal unless you
: can find a suitable way to combine the signals from those antennas
: with the same relative phasing to feed your receiver.

I know that Mort, KA1OTP has sucessfully done this 1296 MHz receive.
He uses and array of beams (probably loop yagis) and uses separate
preamps. This avoids the high line loss problems that affect receive
more than transmit (assuming your transmission lines aren't cooled with
liquid nitrogen to reduce their noise contribution :-)).

This might be interesting for 432 EME. Back of the envelope
calculations indicate that four sets of 100 watt bricks/0.3 dB NF
preamps/FO-22 yagis (all mast mounted) ought to hear echoes
quite well. There is a big gain is on receive from eliminating
phasing line losses ahead of the preamp. An advantage of this system
would be that RG-213/U could be used for all the coax runs. And,
if you are homebrewing everything, it isn't necessarily four
times more expensive to build 4 amps/preamps/antennas.

Finally, you might try out your system with cheap amplifiers,
perhaps MMICs and homebrew transmatches. This might let you
evaluate how well it will work before you apply real power.
Yeah, its not as exciting as smoke testing...

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3089. Re: microwave oven transmitter!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 22:55:27 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Oct25.225527.3286@grian.cps.altadena.ca.us>
Source record: 115775

dmiller@crl.com (Donald J. Miller) writes:

>Tyler Harpster (TJH112@psuvm.psu.edu) wrote:
>: I once heard of a guy using the guts of a microwave oven to transmit his own
>: tv signals to a homemade receiver designed to recieve at that frequency.
>: PEP was something like 600 watts because of the size of the oven used.
>: Obviously this is not the sort of transmitter you want to stand in front of.
>: Anyone have any ideas as to how to carry this out? Tyler. N3SPD

>This guy was a runner-up in RF Design magazine's yearly design contest
>a few years back. I don't remember which issue featured this guy's work,
>but you could do some research at your nearest technical library and find
>out...

And he did a QST article a few months after RF Design published it.
At least I think it was QST -it might have been 73.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3090. silence on BOATANCHORS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-25 23:36:47 UTC
From: ab4el@cybernetics.net
Message-ID: <38k4qf$j8l@jabba.cybernetics.net>
Source record: 115786
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

If you have *specific* knowledge as to why boatanchors@gnu.ai.mit.edu
has become silent...please email me.

--
de AB4EL emailer of boatanchors daily digests

3091. Wanted address for ROTEX CO Dallas Texas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 00:13:27 UTC
From: gordonj@hotblk.aed.dsto.gov.au
Message-ID: <1994Oct26.101327.1@hotblk.aed.dsto.gov.au>
Source record: 115849

Can anyone help me with a circuit diagram for a Rotex model 600 ultrasonic cleaner, or tell me the part number of the active device in the oscillator.

Does anyone know if it is a bipolar transistor, or a FET, and what it is?

I have written several letters to Rotex over the past eighteen months without getting a reply. Perhaps I have the wrong address, or Rotex are no longer in business.
The address that I have is;

ROTEX CO
8816 Director's Row
Box 560428
Dallas Texas
75356

I would appreciate if someone with a phone book for Dallas would confirm that the address I have is correct, or send me the correct address or fax number, or confirm that Rotex still exists.

Any information would be gratefully received.
Thank you in anticipation.
Jim Gordon.
--
.
+------------------------------+-------------------------------------+
Jim Gordon	Aeronautical & Maritime Research Lab
Senior Professional Officer	506 Lorimer Street
Airframes & Engines Division	Fishermens Bend VIC 3207
Tel: +61 3 626 7681	Melbourne, Australia
Fax: +61 3 626 7092	eMail: gordonj@aed.arl.dsto.gov.au
+------------------------------+-------------------------------------+

3092. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 02:22:12 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <38kegk$69h@abyss.West.Sun.COM>
Source record: 115776

In article 8d8@franklin.cc.utas.edu.au, ian.mitchell@research.utas.edu.au (Ian Mitchell) writes:
>Hello All,
>
>I am building a (fairly) simple direct conversion SSB receiver
>for the 80m amateur band to test out some ideas using a 74HC4046
>PLL before building a more general coverage receiver.

Hmmmm... maybe you can help us all out and measure the phase noise of this receiver. The HC4046 VCO is reputed to be quite noisy; are you using the on chip VCO or an off-chip VCO.

>With the filter I'm using the output impedence is the same as the input
>impedence. The first active device in the receiver is a JFET which
>has a high impedence.

A JFET doesn't necessarily have to have a high input impedance. A grounded gate (also called common-gate) JFET can have a fairly low input impedance, which is inversely proportional to the gain of the FET. An MPF102/2N4416 ends offering an input impedance of about 200 ohms, a U/J308-310 ends up offering about 60-80 ohms of input impedance.

More importantly, the input impedance of a common-gate JFET amplifier is almost entirely real, which is appealing for terminating a filter. Restating this, the input impedance of a common-gate JFET is resistive over a wide range of frequency.

Other options include using an MAR/MSA device, which offers an excellent input match to 50 ohms but will tend to be noisier and more expensive than a JFET. Also, you'd need to use a strong MSA part, like an MSA-1104, which offers a P1db of +17dBm with a NF of 3.3dB or so. At HF, this device might be a really good option.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

3093. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 03:35:18 UTC
From: wk@muscle.frc.maf.govt.nz
Message-ID: <38kipm$s9d@muscle.frc.maf.govt.nz>
Source record: 115778

Yes it is a good idea to try to roughly match the BP or LP filter at the RX input at both ends. For the filter to work as designed, it needs to be driven by a source of specified impedance. Also, the load should be the one it was designed for.

However, don't be too paranoia about terminating your front end filter. Real world antennas are only 50 ohms at the design frequency, at out of band frequencies (where the filter is supposed to reject signals) the source impedance could be anything. It is valid to assume your antenna is 50 ohms and resistive at the operating frequency if it gives you an VSWR of 1 on transmit.

You mention the filter you use has an input impedance equal to the output impedance ('half wave filter'). The JFET that terminates the filter forms most likely a load much higher than 50 ohms, so you should really step down the JFET gate impedance to 50 ohms for the filter to be terminated properly.

An easy way of doing this is to swamp the gate with a 50 ohm resistor, your filter will like this :-) A better way is to wind a transformer and try to properly match the gate impedance to 50 ohms resistive, e.g. swamp the gate with 1 k and put a 50 ohms -> 1 k transformer in front of it.

Aside from making your front end filter happy by properly terminating it, we have a couple more issues here. Firstly, you want to maximise power transfer from your antenna into your JFET for best receiver sensitivity. Secondly, the JFET needs to be driven by such a source impedance as to give you the best signal/noise performance. Ideally, you want to meet all three requirements... a bit like finding the Holy Grail :-)

In reality, you make trade-offs, and decide that the QRN on 80 is high enough for the noise performance not to matter much, and you are getting signals at 20 over nine so you don't worry too much about sensitivity. Also, the RX is a prototype test bed for a PLL anyway, but you would rather have good out of band rejection to keep the intermods down so the emphasis is on filter termination.

Have a look at Solid State Design (ARRL) for some practical hints on receiver front end design, gain and noise considerations. Chris Bowick's book as mentioned by WS2B is excellent too, for filter design

Cheers,

Wilbert, ZL2BSJ

--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

3094. Re: Kenwood TS-140/680 Serial Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 03:42:44 UTC
From: wk@muscle.news
Message-ID: <WK.94Oct26164244@muscle.news>
Source record: 115779

QST Feb 1993 page 37: Computer controlling Icom, Kenwood, Ten-Tec,
Yaesu transceivers with a MAX232 and a couple of gates.

Hope this helps.

Wilbert, Zl2BSJ
--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

3095. Transmitting Data over A FM Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 04:37:17 UTC
From: dlee@esd.dl.nec.com
Message-ID: <Cy9JI6.A76@esd.dl.nec.com>
Source record: 115790

I'm looking for info on how to transfer data over a FM Radio. I'm not sure if I'm in the right newsgroup for this or not but it seems to be the closest that I've found. More specifically for example would be something like how the airlines send data from the airplanes to the control towers (or wherever) which they do over the same frequencies that they talk over (they apparently hit a button to disable the mike and do the tranmission). Is there a chip that could interface to the microphone to send the data over.

Any info would be appreciated, books, chip manufacturers, other newsgroups anything, e-mail or post would be fine.

Thanks in advance,

Don

3096. Re: Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 09:26:01 UTC
From: guy@macadam.mpce.mq.edu.au
Message-ID: <38l7b9$g81@sunb.ocs.mq.edu.au>
Source record: 115782

CC015012@brownvm.brown.edu wrote:
: Re. Heatsinks and black Aluminum:

Most of the heat would be lost by convection into air flowing vertically across the fins. This has nothing much to do with emissivity, but the black paint limits the heat flow to the fin surface, so the temperature goes UP.

Radiation loss is certainly improved by black paint, but the temperature needs to be quite high before radiation becomes the main source of heat loss, as would be the case for cooling a combustion engine. Emissivity is to do with radiative loss.

My advice would be to stick with the metal surface unless you can black anodize it.

Guy Fletcher guy@macadam.mpce.mq.edu.au

3097. Missconcept on TX impedance!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 09:59:34 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38l9a6$1ree@info2.rus.uni-stuttgart.de>
Source record: 115783

Hello OMs,

Following the thread "where does the power go" I thought that
some clarification might be usefull:

Output impedance of power amplifiers

There is a common misunderstanding regarding the output impedance
of power amplifiers designed for 50 Ohms loads and to their matching to a load.

Small signal generators used as test equipment have indeed 50 Ohms
output impedance: their output stage is a low impedance voltage source,
followed ba a *physical* 50 Ohms resistor, which dissipates half the
power generated and serves the purpose of absorbing any signals reflected
from unmatched loads.

All wide band power amplifiers, amateur or professional (e.g. the ENI
1-550 MHz amp in my QRL) behave somewhat like an audio amplifier
(Yes I am simplifying here, but this does not affect the general
message). They are IN FIRST APPROXIMATION a voltage source,
with a maximum current capability. If operated into a too
high impedance, they will not deliver the maximum current and power,
and if operated into a low impedance the maximum current will be exceeded,
and suitable safety circuits will hopefully be activated. For complex loads
things of cause look a little more complicated.

So therefore class C amplifiers are capable of efficiencies far
in excess of 50%!.

PROOF? If a mismatch is present, normally the foreward power reading
changes also, even if no RF is present on the outer of the coax.
(This common effect dissapears, if the reflected power is dumped in
a circulator with terminated 3rd port). this change is due to the
re-reflected wave adding or substracting to/from the TX foreward power,
depending on the phase.

I hope this is of help, 73, Moritz DL5UH

3098. Re: SWR between transmitter and amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 12:39:41 UTC
From: clarke@longwood.cs.ucf.edu
Message-ID: <38limd$r4n@longwood.cs.ucf.edu>
Source record: 115784

In article <tom_taylor-1710941239150001@tom-taylor.taligent.com> tom_taylor@taligent.com (Tom Taylor) writes:
>I recently finished building a homebrew two tube 4-400 grounded grid
>amplifier for 80-10 meters. It works great. However, I didn't build
>a band-switched tuned input circuit. Without it, the input impedence is
>approximately 50 ohms... but not exactly. I'm driving the amp with

I would say that as long as the coax between your exciter and the amplifier is less-less than a wavelength, that you have a tuned circuit on the input of your amplifier - the output tank/matching circuit of the exciter. The coax then acts like a lumped RLC as far as the excitor and amplifier are concerned and the coax RLC are tuned out by the exciter.

Tom Clarke

3099. HELP: Any homebrewed 40-m Mobile Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 17:07:06 UTC
From: wasmir@dlep1.itg.ti.com
Message-ID: <wasmir.23.00052D47@dlep1.itg.ti.com>
Source record: 115781

Hello folks! Any idea where I can find a homebrewed 40-meter mobile antenna?
Any articles regarding the antenna is very much appreciated.

Please help.

73 es MABUHAY from the Philippines (de DU2BBH, Wasmir)

3100. Re: SWR between transmitter and amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 18:13:14 UTC
From: rdewan@uhura.cc.rochester.edu
Message-ID: <1994Oct26.181314.19091@galileo.cc.rochester.edu>
Source record: 115794

In article <38limd$r4n@longwood.cs.ucf.edu> clarke@longwood.cs.ucf.edu (Tom Clarke) writes:
>In article <tom_taylor-1710941239150001@tom-taylor.taligent.com> tom_taylor@taligent.com (Tom Taylor) writes:
>>I recently finished building a homebrew two tube 4-400 grounded grid
>>amplifier for 80-10 meters. It works great. However, I didn't build
>>a band-switched tuned input circuit. Without it, the input impedence is
>>approximately 50 ohms... but not exactly. I'm driving the amp with
>
>I would say that as long as the coax between your exciter and the
>amplifier is less-less than a wavelength, that you have a tuned
^^^^^^^^^^^^^^^^^^^^^^^^^^^^
>circuit on the input of your amplifier - the output tank/matching circuit
>of the exciter. The coax then acts like a lumped RLC as far as
>the excitor and amplifier are concerned and the coax RLC are tuned
>out by the exciter.

Length matters in two ways here:
- attenuation. In this case, shorter the coax the better
- transmission line transformer: here the relationship is non-monotonic.
For instance, going from 3/8 to 1/2 wave in coax electrical length will
will result in "less" impedance tranformation from input to output even
though the coax is longer.

Rajiv
aa9ch

3101. Uzbekistan licensing requirements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 18:15:32 UTC
From: bc21470@bingsuns.cc.binghamton.edu
Message-ID: <38m6c4$5iv@bingnet1.cc.binghamton.edu>
Source record: 115793

[No readable article body recovered]

3102. Re: Kenwood TS-140/680 Serial Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 18:49:41 UTC
From: cwtech@infinet.com
Message-ID: <38m8c5$mmf@rigel.infinet.com>
Source record: 115792

In article <WK.94Oct26164244@muscle.news>, Wilbert Knol <wk@muscle.news> wrote:
>
>QST Feb 1993 page 37: Computer controlling Icom, Kenwood, Ten-Tec,
>Yaesu transceivers with a MAX232 and a couple of gates.
>
>Hope this helps.
>

I also still have the kits mentioned in the article. There has been an address change however:

CW Technology
7328 Timbercreek Court
Reynoldsburg, OH 43068-1181

These interfaces are also going to be in the Station Setup and Accessories chapter of the '95 Handbook.

Feel free to send e-mail if you want specific information. Thanks.
--

```
_/_/_/
_/ _/ _/ _/ CW Technology - Your Innovative Kit Source
_/ _/ _/ e-mail to cwtech@infinet.com or call
_/ _/ _/ 800-547-7479 for a free catalog!
_/ _/ _/
_/ _ _/ _/_ _/ Specializing in complete, easy-to-build kits
_/ _/ _/ _/ _/ _/ for Amateur Radio, Robotics, Motion Control,
_/_/_/ _/_/ _/_/ and Just-Plain-FUN!
```

3103. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 20:29:16 UTC
From: rkarlqu@scd.hp.com
Message-ID: <38me6s$qi5@hpscit.sc.hp.com>
Source record: 115789

In article <CyAIxq.3tG@hpcvsnz.cv.hp.com>, Tom Bruhns <tomb@lsid.hp.com> wrote:
>Richard Karlquist (rkarlqu@scd.hp.com) wrote:
>: >Ian Mitchell (ian.mitchell@research.utas.edu.au) wrote:
>: >
>: >: With the filter I'm using the output impedence is the same as the input
>: >: impedence. The first active device in the receiver is a jFET which
>: >: has a high impedence.
>: >: ...
>
>: Use a "singly-terminated" type filter, which is designed to go from a
>: real impedance (such as 50 ohms) to an "infinite" impedance, such as
>: the gate of a FET. Decrease the size of the last capacitor by the
>: gate input capacitance.
>
>If the FET is operating at a frequency where the real part of its input
>impedance is not "much much" larger than the filter impedance, you can
>design the filter to actually match to that impedance. Equal-termination

Only if the gate capacitance is low enough to be absorbed into the end
capacitor of the ladder filter. And that only works for bandpass filters
because the real part of the admittance is a strong function of frequency.
Not practical in most cases.

>and single-terminated filters are just two cases of the generalized ability
>to go between any two impedances and do filtering at the same time. But
>not all references do a good job of covering this.

The Zverev reference I cited has tables for intermediate situations where
you want to go from say 50 ohms to 500 ohms, etc. You could also look
at impedance transforming bandpass filter tables which appeared in
IEEE Trans. on Microwave T&T about April 1966 or so.

>
>73, K7ITM
>

Rick N6RK
rkarlqu@scd.hp.com

3104. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 20:29:59 UTC
From: G.Moretti@massey.ac.nz
Message-ID: <G.Moretti-271094093000@130.123.96.67>
Source record: 115787

In article <kludgeCy4vD8.EsD@netcom.com>, kludge@netcom.com (Scott Dorsey)
wrote:

> In article <38bv67$isq@sandra.teleport.com> burt@teleport.com (Burt Keeble) writes:
> >lengthy post deleted to save bandwidth.
> >
> >I got several pieces of e-mail, and saved Gary's post for further
> >experimentation.
> >
> >Anyone else have any ideas? Or want to talk about powering the thing
> >up using lemons for batteries? Or stuff like that?
>
> Yeah, but then you need an amplifying element to power them. I have
> homebrewed vacuum tubes by taking the envelope off a #47 bulb, adding
> a wound copper wire for the grid and a piece of metal foil for the plate,
> just wrapping the foil around a contact wire. Put the whole thing in a
> test tube, and used cheap soda glass rod and an oxy-propane torch to
> seal it, then pumped it down while measuring the transconductance; when
> the meter won't go any further, the vacuum is as good as you can get it.
> They always went gassy after a short time, due to the lack of a getter
> and the fact that the metal-glass seals were extremely poor, but it was
> a fun experiment. And I did make a couple of radios that worked.
>
Burt

At last - I knew someone else must have tried it ...

Several years ago I posted a question asking whether anyone had ever made
valves (tubes for those Stateside) in peanut butter jars. There were
many replies but noone had. How did you pump it down (what sort of pump
is necessary?

All this high tech is bad for home-brewing :-) Every once in a while
it's nice to make a crystal set or something that doesn't need an semi-
conductor fabrication plant.

One of my first projects (that worked) was a carbon microphone made by
breaking a razor blade in half and fixin each have so that the notches
faced upwards. A pencil lead was then placed across the two blades.
As you talk at it the resistance varies & voila - a carbon mike.

Anyway, back to the thread - Burt how about a note describing the
procedures you used in a little more detail?

Anyone else for homebrew semiconductors? There's lots of sand about :-)

Cheers
Giovanni

--

____
Giovanni Moretti "WHATEVER YOU CAN DO, OR DREAM YOU CAN, BEGIN IT.
Computer Science Dept BOLDNESS HAS GENIUS, POWER AND MAGIC IN IT" Goethe
Massey University G.Moretti@massey.ac.nz
Palmerston North, NEW ZEALAND. Ph +64-6-3569099 Fax +64-6-3505611 ZL2BOI

3105. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 20:55:31 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <38mfo3$7dj@proffa.cc.tut.fi>
Source record: 115788

Dana Myers (myers@Cypress.West.Sun.Com) wrote:

[about a front end for the 80 m band]

> Other options include using an MAR/MSA device, which offers an excellent
> input match to 50 ohms but will tend to be noisier and more expensive than
> a JFET. Also, you'd need to use a strong MSA part, like an MSA-1104,
> which offers a P1db of +17dBm with a NF of 3.3dB or so. At HF, this
> device might be a really good option.

Unlike other MAR/MSA devices, the characteristics for MAV-11 (and
appearantly also for MSA-1104) are not specified down to DC.
The specified frequency range is 10 MHz - 1000 MHz.

For DC and other low frequency applications MAR-4 (MSA-0485)
P1dB +11 dBm, NF 7 dB might be more suitable (DC - 1000 MHz).

Please note that as MSA/MAR/MAV MMICs have a lot of gain well above
1 or 2 GHz, it is very important to keep strong TV and FM-broadcast
signals out of the amplifier. Elliptic low-pass filters and capacitively
coupled band-pass filters are problematic, as their attenuation at
VHF and UHF frequencies might be only 20-40 dB.

A normal 3 or 5 element pi low-pass filter at the input will usually
do the trick.

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

3106. What jumper on u16 to allow field programming?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-26 22:41:36 UTC
From: an22190@anon.penet.fi
Message-ID: <224326Z26101994@anon.penet.fi>
Source record: 115791

Hi,
I am interested in finding out which jumper needs to be removed in order to
allow the Icom U16 to be field programmable? Are some models not able to be
programmed from the keyboard? How can I check if my radio will allow it?
Best Wishes,
Andrew.
PS:Please excuse my anon posting however it assures that my mail reaches usenet.I would
prefer if you could reply via e-mail as my USENET reading site is often
down :(

To find out more about the anon service, send mail to help@anon.penet.fi.
Due to the double-blind, any mail replies to this message will be anonymized,
and an anonymous id will be allocated automatically. You have been warned.
Please report any problems, inappropriate use etc. to admin@anon.penet.fi.

3107. Im-2-10Uh Inductor in 'resistor' package

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 01:22:53 UTC
From: mike@io.org
Message-ID: <38mvdd$6cj@ionews.io.org>
Source record: 115819

I bought a IM-2-10Uh inductor to experiment with in a tuning circuit.

This is the first time I've seen this type of inductor (in a 'resistor'
like package).

What are they specfically designed for?

How do they compare to a toroid type inductor?

Mike
--
==
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==

3108. Need mail-order source for MC2831A chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 03:17:46 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <38n64q$rhn@maple.enet.net>
Source record: 115795

A friend and I have been playing with some FM transmitter designs using Motorola's MC2831A IC. We used to get them from DC Electronics here in Scottsdale but DC doesn't have them anymore. If anyone knows of a reasonably reliable mail-order source for this chip, please clue us in.

Thanks much.

--Jeff Duntemann KG7JF
jeffd@coriolis.com

3109. Re: xmitting on 2.4 GHz with Microwave Oven?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 03:22:11 UTC
From: erich@owens.ridgecrest.ca.us
Message-ID: <CyBAoz.GGE@ridgecrest.ca.us>
Source record: 115796

[No readable article body recovered]

3110. Six meter "cavity" filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 04:30:46 UTC
From: wrt@eskimo.com
Message-ID: <CyBDvG.4qo@eskimo.com>
Source record: 115797

Several people have responded to my earlier post about my experinces with a six meter "cavity" filter asking for construction details, so here they are. If you didn't read the post, I should repeat one caution about this unit - while it is pretty sharp and totally cured my intermod problem here, it should only be used for receiving. It has a measured 3db insertion loss and that's too much to tolerate for transmitting. If one wanted to improve that, it could be made out of some low-loss metal and/or silver plated, but hey - much of the appeal of this is making it out of what otherwise would be trash, so please keep that in mind.

One other thing before we begin. The word "cavity" is used pretty loosely here. It does LOOK like a cavity in the microwave sense, but it really isn't. It's much too small for a six meter wavelength. What it really is is a single-turn loop with identical inductive coupling in and out. One of the neat things about it is that if you make it exactly symmetrical it won't affect your SWR or impedance matching to the receiver at all. The impedance step up or down on the input is exactly matched by the impedance step down or up on the output. There's just one adjustment which you tune for max signal strength and that's it. Compare that to a conventional L-C filter which can be tricky to align, especially the multi-section high or low pass units.

Having said that, here we go:

You'll need two three-pound coffee cans, three six-ounce juice cans, two standard SO-239 coax fittings (BNCs would be ok), about two feet of #14 bare or enameled wire and one variable capacitor of about 200 pf.

Here are the measurements of the cans used here: The coffee cans are 6 1/8 inches in diameter and just a hair short of 7 inches long. The juice cans are 2 1/8 inches in diameter and 3 7/8 inches long. These dimensions were common back in the sixties when this was built, but if you can't find exactly the same today, just get as close as you can. Because of the characteristics mentioned earlier, there's a lot of range on this thing and it'll work fine.

Your two coffee cans will probably have the tops gone when you get them. Take one and remove the bottom also. Place them end to end and solder them together so you have one long skinny six pound can. The metal will probably not solder well if it's very old, so shine it up with some sandpaper or brillo pads, etc, and use extra flux if you have it. For years we've all been told not to use acid core solder on electronic items, but here is one case where you could IF you wash it off carefully afterwards. Don't use it on the coax connectors or the capacitor.

Install the two coax connectors opposite each other, about 8 inches up from the bottom. This will place them about one inch above the joint of the two cans. Take your #14 wire and solder it to the center of the connector. Bring it straight out one inch and then bend it down toward the bottom of the can. Drill a hole just large enough for the wire in the bottom of the can, about 1 1/8 inches in from the outside edge of the bottom. Pass the wire through it and solder it from the outside of the can. Do the same for both connectors and make them as symmetrical as you can. What you have now is a simple one-turn loop of wire coming out of the connector and going to the bottom of the can. The two loops will be sort of "looking" at each other from opposite sides of the can.

Your juice cans will probably also have one end removed. You don't need to remove the other end on any of them. Take one of them and drill a hole for a screw in the exact center of the bottom. Screw size is not important - a # 4, 6, 8, or 10 will be fine. Put the screw in the hole from the INSIDE of the can and put a nut on it from the outside. Tighten it reeeeeal good, 'cause once things are soldered together, you'll never be able to get to it again. Now solder the other two cans to this one like before, making one long skinny 18 ounce can. Do the top can bottom side up so when you're done you have the whole thing sealed.

Now drill a hole in the exact center of the bottom of the coffee cans, same size as before, of course. Now place the juice cans inside the coffee cans with the screw protruding out the bottom and put a nut on it and tighten it down. Your #14 wires are now running parallel to the juice cans and should be about 1/2 inch away from them. Again, don't worry about the exact spacing as long as they are both symmetrical.

Now install the variable capacitor on the side of the coffee can so that it makes sort of a "bridge" from the coffee cans to the TOP of the juice cans. Place it halfway around from each connector so that things remain symmetrical. If it is just exactly long enough to reach the juice cans, great! Just solder it directly to them. If it's a little short, use a piece of your #14 wire. If it's too long so that it bumps into the juice cans, just put it so that it is ABOVE the juice cans and run a wire.

Now, do you see what you have? You have a one turn loop consisting of the capacitor, the juice cans and the return through the coffee cans. You have two coupling loops from the coax connectors which couple into and out of the one turn loop. Simple and elegant! Too bad it's so lossy. :-(

To tune it up, just peak the capacitor for max on the s-meter. It should have a nice sharp peak, just what you want. Put the plastic lid on the coffee can to keep any critters out and you're done!

Total cost from even a poor junk box is approximately $0.00. How can you go wrong?

Thanks go to Bryan, KD7LS, who built and used this back in his early ham career and worked a ton of six meter DX in spite of having it in his transmitter line. Wonder how much more he would have worked with the extra 3db.....? Oh well. This wasn't Bryan's design - he got it from some long-forgotten publication of the era and it was very popular for it's time. If anyone knows who the designer was, please post it. I'd be most interested to know.

Good luck to all and here's hoping it fixes your intermod as well as it fixed mine!

73, Bill, W7LZP

3111. go through

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 05:46:21 UTC
From: testing
Message-ID: <38nerd$rrf@franklin.cc.utas.edu.au>
Source record: 115798

```
testing
```

3112. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 05:47:58 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <38neue$rrj@franklin.cc.utas.edu.au>
Source record: 115799

[No readable article body recovered]

3113. Re: Impedence matching?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 05:51:32 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <38nf55$rs1@franklin.cc.utas.edu.au>
Source record: 115800

>Hmmmm... maybe you can help us all out and measure the phase noise of
>this receiver. The HC4046 VCO is reputed to be quite noisy; are you using
>the on chip VCO or an off-chip VCO.

Firstly, let me thank all those who replied to my original post. Most helpful.

In answer to the above question, I will be using the phase comparator only. With either output 2 or 3, not the XOR only output, since the divided LO signal will not be a 50% duty cycle.

Ian

3114. Re: Decoding Digital Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 06:42:59 UTC
From: ac827@lafn.org
Message-ID: <1994Oct27.064259.6934@lafn.org>
Source record: 115802

In a previous article, starin@netcom.com (Jeffrey Starin) says:

>I am wondering if anyone in this newsgroup would know of a method for
>capturing digital data in the airwaves and piping it into a computer
>Soundblaster card for analysis.
>
>Any help much appreciated.
>
>Please feel free to contact me directly by e-mail, or post here for the
>benefit of others who may want to know same.
>
>Thanks
>--
>Jeffrey
>{New York}
>
I'm beginning to be interested in the same thing. I haven't found
any source code yet, other than an example of how to do simple
input and output with the Soundblaster using BASIC. I'm a
programmer, and I'm willing to do some development on this, but
it would be nice to have some information about the various types
of digital transmissions that are broadcast, especially the ones
that are fairly simple (and not encrypted). Can anyone provide
some information about frequencies, data rates, data representation,
and the like? And of course any example programs would help
a lot, too. Thanks.
--Tom Rugg

3115. Re: Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 07:52:09 UTC
From: wa2ise@netcom.com
Message-ID: <wa2iseCyBn6y.9yM@netcom.com>
Source record: 115804

I've used black magic marker to make heat sinks dark. Paint would add
a significant layer on the aluminium, maybe act like a thermal insulator
even if it radiates whatever heat that gets thru better than bare metal.
The magic marker coating is a lot thinner than paint would be.

Was never sure if the black magic marker-ing really helped or not....

3116. Source of chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 09:52:38 UTC
From: ip@g8sjp.demon.co.uk
Message-ID: <783251558snz@g8sjp.demon.co.uk>
Source record: 115835

Folks,

I've just exhausted all the opportunities (known to me) for finding the following Motorola IC:-

MC145436P

which is (probably) a hybrid DTMF decoder with audio filter, time base and TTL-level output.

Any suggestions of outlets (either US or UK) which carry this part would be most appreciated.

--
Iain Philipps

3117. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 11:30:02 UTC
From: jimn0oct@aol.com
Message-ID: <38o2vq$sfq@newsbf01.news.aol.com>
Source record: 115801

In article <38m6gv$7o9@abyss.West.Sun.COM>, myers@Cypress.West.Sun.Com (Dana Myers) writes:

Don't foget gentlemen, that the output the original post was describing was the output of an **antenna tuner** not the amplifier itself. I applaud the experiments, but to be true to the original post, it should contain a T-network (or whatever is inside the '440) as the output.

73, Jim

3118. Looking for Motorola Pager Manual

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 12:18:30 UTC
From: vaillan@ireq.hydro.qc.ca
Message-ID: <CyBzIv.Jxr@ireq.hydro.qc.ca>
Source record: 115803

We would like to modify some Motorola UHF PBR2000 Tone and Voice pagers
to the UHF Ham band for usage by our Club members.

We already changed the crystal and got one working on 448.275 MHz.
We now have a small "birdy oscillation" in the background and would like
to get ride of it. To do so, we would like to have a copy of the manual and
fine tune the unit.

The complete Motorola model number of the pager is: A04BGC2568A and
the required manual number might be: 6881006B15.

We will pay for the cost of the copies and if you know a source for more
of these used pager, we would like to buy more.

Thank you very much, 73 de Clem. VE2HQJ

Clement Vaillancourt, Institut de Recherche d'Hydro-Quebec
Analyste, Varennes, P. Quebec, Canada, J3X 1S1
Informatique scientifique Tel:+1 514 652 8238 Fax:+1 514 652 8309
Int: vaillan@ireq.hydro.qc.ca Radio-Amateur: VE2HQJ@VE2CRL.#MTL.PQ.CAN.NA

3119. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 13:45:16 UTC
From: kludge@netcom.com
Message-ID: <kludgeCyC3JH.M90@netcom.com>
Source record: 115806

In article <G.Moretti-271094093000@130.123.96.67> G.Moretti@massey.ac.nz (Giovanni Moretti) writes:
>
>Several years ago I posted a question asking whether anyone had ever made
>valves (tubes for those Stateside) in peanut butter jars. There were
>many replies but noone had. How did you pump it down (what sort of pump
>is necessary?

I used a 1930s Welch mechanical pump, which frankly isn't a terribly good choice. I bet, though, that if you constructed a design, your local neon signal company would be happy to pump it down for you. It doesn't have to be a perfect vacuum to work, although it certainly never hurt.

>All this high tech is bad for home-brewing :-) Every once in a while
>it's nice to make a crystal set or something that doesn't need an semi-
>conductor fabrication plant.

Actually, I like all this high tech. You can get a complete frequency synthesizer on a chip from your local TV repair place... half of your wideband receiver is already designed for you if you scrap a varactor tuner out of a TV set. What I don't like is how poorly documented so much of this high tech gear is.

>One of my first projects (that worked) was a carbon microphone made by
>breaking a razor blade in half and fixin each have so that the notches
>faced upwards. A pencil lead was then placed across the two blades.
>As you talk at it the resistance varies & voila - a carbon mike.

Yup. You can even make a homebrew ribbon microphone with a couple of magnets, a transformer, and the foil from a Wrigley gum wrapper. But that's another thread.

>Anyone else for homebrew semiconductors? There's lots of sand about :-)

Sure! Copper oxide or galena?
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

3120. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 15:46:47 UTC
From: jfw@ksr.com
Message-ID: <38oi17$q0q@hopscotch.ksr.com>
Source record: 115805

lascal@magritte.its.rpi.edu (Lance Lascari WS2B) writes:
>Cecil_A_Moore@ccm.ch.intel.com wrote:
>: In article <9409247830.AA783016585@mails.imed.com>,
>: <mack@mails.imed.COM> wrote:
>: > Since the Transmitter impedance matches the impedance
>: >of the coax, no energy is sent back to the load. >Ray Mack >WD5IFS
>: Hi Ray, If the transmitter impedance is 50 ohms and the load is 50 ohms,
>: then a 100w input transmitter will deliver no more than 50w to the load.
>: Yet we know that a 100w input class C amplifier will deliver much more
>: than 50w to the load. How do you explain that?
> The full power is being transferred, however the voltage does
>drop across the load, by 3db.

Thank you for playing, but this was a trick question. The correct answer is:
the transmitter impedance is _not_ 50 ohms. Someone else on this thread
nicely explained loadline impedance, so I'll attack it from the other end:

In an ideal class C amplifier, the active element is either fully off or
fully on. When it is fully off, its impedance is (of course) infinite;
when it is fully on, its impedance is 0. When is its impedance 50 ohms?

That's another trick question, as I hope you realized; the answer is
"never". No, the output matching network does not translate the active
element's impedance to 50 ohms -- *which* impedance is it translating to
50 ohms, infinity or zero?

What you are thinking of is a "signal generator", which is a device that
actually has an analytical output impedance*. For a good discussion of
the difference between a "signal generator" and a "transmitter", get a
copy of Walt Maxwell's book "Reflections".

73, John, WB7EEL/1

* Note that one can (and often does) make a signal generator by taking a
transmitter and following it with a resistive pad (T or pi), whose sole
purpose is to enforce the 50-ohm source impedance regardless of the actual
instantaneous impedance of the actual transmitter.

3121. Re: Decoding Digital Data

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 17:23:32 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38onmk$2ce5@info2.rus.uni-stuttgart.de>
Source record: 115808

>
>>I am wondering if anyone in this newsgroup would know of a method for
>>capturing digital data in the airwaves and piping it into a computer
>>Soundblaster card for analysis.
>>
>I'm beginning to be interested in the same thing.

Tom,
Not sure if you know, but there is a program that captures and decodes
CW (morse code) with a SB, and there are also programs decodeng digital
data (RTTY, Packet, et c.) by directly feeding the audio to the
serial port. How it works? the port generates an interrupt upon
zero crossings and the computer measures the time intervals
and so reconstructs the transmitted audio and code.

The programs are PD.

Personally I would be very interested in a program decodeng transissions
using a SB. May be you find information on codes in the ARRL Handbook.

Success, bye for now, Moritz DL5UH

3122. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 18:34:27 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <38orrj$odi@chnews.intel.com>
Source record: 115810

In article <9409267832.AA783201194@mails.imed.com>,
<mack@mails.imed.COM> wrote:
>
>If Gary's assertion is correct that the transmitter is not a "real" resistance
>and that the power will instead be reflected back, then there should be an
>infinite SWR on the line. If my understanding of the theory is correct, then
>there should be 1:1 SWR (i.e. the transmitter will absorb all the power).

Hi Ray, the Mini-Circuits manual lists the Output Return Loss of the MAR-4
at 100MHz as -4.73db, 0.58@-24deg. Looks like the SWR will be neither infinite
nor 1:1. I suspect it will be between 2:1 and 6:1 at 100MHz.

An easier experiment would be to take an average 100w transmitter, back it
down to minimum output into a 50 ohm coax section with a dummy load. Measure
the forward power with a 50 ohm dummy load and measure the forward power with
a 100 ohm dummy load. If the forward power reading increases with the 100
ohm load with no increase in input power then the delta increase is the
power being reflected by the transmitter.

As someone else pointed out, if the transmitter has a built in antenna tuner
or a tunable pi network output then a conjugate match will be achieved and
almost all of the reflected power will be re-reflected.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3123. HELP !!! - Kenwood Trio PS-30 Pwr Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 19:29:55 UTC
From: Jimmie Holman <jholman@onramp.net>
Message-ID: <NEWTNews.13852.783286545.jholman@onramp.net>
Source record: 115807
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Help !!!!
Got my ps-30 power supply open ....
it's putting out voltage .... the xciever works fine on receive .... but on
xmit the (xciever) lights dim

Need schematic or "where to specifically look

Thakns in advance

post here or email direct jholman@onramp.net

3124. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 19:59:14 UTC
From: burt@teleport.com
Message-ID: <38p0qj$ip6@elaine.teleport.com>
Source record: 115809

In article <kludgeCyC3JH.M90@netcom.com*,
Scott Dorsey <kludge@netcom.com* wrote:
*In article <G.Moretti-271094093000@130.123.96.67> G.Moretti@massey.ac.nz (Giovanni
Moretti) writes:

Text deleted for the usual reason.

*
*>One of my first projects (that worked) was a carbon microphone made by
*>breaking a razor blade in half and fixin each have so that the notches
*>faced upwards. A pencil lead was then placed across the two blades.
*>As you talk at it the resistance varies & voila - a carbon mike.
*
*Yup. You can even make a homebrew ribbon microphone with a couple of
*magnets, a transformer, and the foil from a Wrigley gum wrapper. But
*that's another thread.

I would very much enjoy it if you created that thread. This
something-out-of-nothing stuff is very entertaining!

-burt

--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3125. Re: Missconcept on TX impedance!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 20:36:43 UTC
From: rkarlqu@scd.hp.com
Message-ID: <38p30r$2pl@hpscit.sc.hp.com>
Source record: 115811

In article <38l9a6$1ree@info2.rus.uni-stuttgart.de>,
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
>
> There is a common misunderstanding regarding the output impedance
>of power amplifiers designed for 50 Ohms loads and to
>their matching to a load.
>
> All wide band power amplifiers, amateur or professional (e.g. the ENI
>1-550 MHz amp in my QRL) behave somewhat like an audio amplifier
>(Yes I am simplifying here, but this does not affect the general
>message). They are IN FIRST APPROXIMATION a voltage source,
>with a maximum current capability. If operated into a too

More likely, a current source, as the output impedance of a transistor
is usually higher than the load impedance. For example, a 12V 100 Watt
exciter transforms the 50 ohm load down to 1 ohm or so. The output impedance
of the transistor is considerably higher than 1 ohm.

Actually, the output impedance could look like a low dissipation capacitor
or a low dissipations inductor of any value. Any point near the
unit circle of the Smith chart will do (near infinite VSWR).

Rick N6RK
rkarlqu@scd.hp.com

3126. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 20:41:12 UTC
From: rkarlqu@scd.hp.com
Message-ID: <38p398$2r2@hpscit.sc.hp.com>
Source record: 115812

In article <9409267832.AA783201194@mails.imed.com>,
<mack@mails.imed.COM> wrote:
>
>Proposed experiment #1:
>
>Build an amplifier using a MAR-4 MMIC. This is a small transmitter that should
>have a 50 Ohm output impedance and be capable of 20 mW of output. Since there

Check the specs on the MAR-4. The output impedance is a "nominal" 50 ohms,
but actually departs from it considerably. Most of these amplifiers have a
3 to 1 output VSWR spec. So the output impedance may be as high as 150 ohms.

Rick N6RK

3127. Re: Missconcept on TX impedance!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-27 23:24:54 UTC
From: tomb@lsid.hp.com
Message-ID: <CyCuDI.MDr@hpcvsnz.cv.hp.com>
Source record: 115814

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: In article <38l9a6$1ree@info2.rus.uni-stuttgart.de>,
: <moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
: >
: > There is a common misunderstanding regarding the output impedance
: >of power amplifiers designed for 50 Ohms loads and to
: >their matching to a load.
: >
: > All wide band power amplifiers, amateur or professional (e.g. the ENI
: >1-550 MHz amp in my QRL) behave somewhat like an audio amplifier
: >(Yes I am simplifying here, but this does not affect the general
: >message). They are IN FIRST APPROXIMATION a voltage source,
: >with a maximum current capability. If operated into a too

: More likely, a current source, as the output impedance of a transistor
: is usually higher than the load impedance. For example, a 12V 100 Watt
: exciter transforms the 50 ohm load down to 1 ohm or so. The output impedance
: of the transistor is considerably higher than 1 ohm.

: Actually, the output impedance could look like a low dissipation capacitor
: or a low dissipations inductor of any value. Any point near the
: unit circle of the Smith chart will do (near infinite VSWR).

I agree with Rick that most ham transmitters are likely to look like a
fairly high impedance source (compared with 50 ohms), but if the final
amplifier uses feedback, this can be altered quite a bit. I don't know if
any are actually fairly close to 50 ohms. They COULD be designed this way,
but if you read between the lines of Rick's second paragraph, you realize
that this is really a bad thing. This is because the reflected wave would
be all absorbed in the transmitter, and it would cause heating somewhere,
most probably in the output active devices. Whether you think in terms of
the reflected wave being absorbed in a resistance or a change in the load
line, the answer comes out the same. If the output causes a very high SWR
for the reflected wave, that's a GOOD thing because it means that reflected
wave can't be dissipated in the transmitter and will instead be sent back
down the transmission line for another try at dissipating in the load (with
a little lost in the line along the way). BTW, if you think that a high
SWR can't cause high dissipation in the final amplifier, consider a load
line that is completely reactive: that is, the load line becomes a circle.
Or consider a load that reflects to the active devices as a short circuit,
a vertical load line. If the load is bad enough, even a transmitter that
tries to re-reflect the reverse wave will end up eating it.

73, K7ITM

3128. Re: Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 00:09:06 UTC
From: ornitz@kodaki.kodak.com
Message-ID: <38pff2$mb6@kodak.rdcs.Kodak.COM>
Source record: 115816

Before you go and paint your heatsinks black, remember that radiation heat transfer is usually pretty insignificant at temperatures below a few hundred degrees F compared to conduction and convection. The thermal conductivity of enamel paint is pretty low compared to the base aluminum. While aluminum oxide (produced by anodizing) is a fairly good thermal insulator, the layer needed for electrical insulation is so thin that it causes little increase in overall thermal resistance. Also remember the fins on heat sinks are there because the thermal conduction of the aluminum is far greater than the natural convection heat transfer from the surface.

If you really want to enhance a heat sink's performance, mount it so both the sink and the fins are vertical. Mounting the sink vertically with the fins horizontal provides poor natural convection; it will be better to mount the sink horizontal with the fins vertical. If you really need lots of heat dissipation, use a fan for forced convection on the fins. [And for exceptionally high dissipation, consider boiling/vapor cooling, i.e. the Eimac 4CV1500B that never seemed to catch on.]

Barry L. Ornitz WA4VZQ
Eastman Chemical Company Research
ornitz@emn.com

3129. Re: Local Radio Jammer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 01:17:27 UTC
From: a-rickf@aladdin.tandem.com
Message-ID: <CyCzL4.A02@ac.tandem.com>
Source record: 115815

In article an4@usenet.INS.CWRU.Edu, aa377@cleveland.Freenet.Edu (Ken Kopin) writes:
>
> Hey all. A friend of mine has been enduring Country AND Western music
> at work for about as long as he can stand. Are there any pre-existing
> files on building a mono-frequency, low-power jammer? Proximity could be
> as far as 30' away, or closer if necessary. Any covering signal would
> be nice (from dead-air to killer decibels) but cost and ease are our
> main concerns.
>
> If you could point me to a FTP site, or some such, I am capable of
> doing the rest, most likely.
>
> Thanks!
>
> Ken Kopin

I don't know if you'd want to do any actual _jamming_.....

But if the country western music is coming from an FM station, a low power FM transmitter that happened to be on the same frequency would come in on the radio.... Because FM is affected by the capture effect, where the strongest signal on frequency is detected by the FM receiver, you could get interesting results with a legal, low power FM transmitter. Try a FM transmitter kit (available from your local electronics store, or the back pages of many electronic magazines).

Of course, for even more interesting results, you might try an FM "bug" on the same frequency. Placed nearby, it would set up a rather severe feedback loop that would result in a howling you wouldn't believe.

Of course, you _could_ just ask the owner of the C&W music machine to turn it down or use headphones... Naw, I guess that's already been done.

Of course, if the radio is AM, things are a bit different, though the hetrodyne squeal of a nearby transmitter, even legal, low power could be rather distrubing.

One of the main problems with this sort of approach, besides the legal\ implications if things get out of hand, is the liklihood the offending radio just gets moved to another frequency, or magically turns into a tape machine or CD player. Short of destructive measures, there's little you can do about them, if requests to the individual or manager fall on deaf ears...

Wishing you the best in your efforts....
-Rick

Rick Frazier at Atalla Corporation, San Jose, CA. a-rickf@ac.tandem.com

3130. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 12:01:34 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <38qp6u$utn@info2.rus.uni-stuttgart.de>
Source record: 115817

>An easier experiment would be to take an average 100w transmitter, back it
>down to minimum output into a 50 ohm coax section with a dummy load. Measure
>the forward power with a 50 ohm dummy load and measure the forward power with
>a 100 ohm dummy load.

Cecil,

Although the discussion gets beyond the intentions of the initial
posting, I should like to continue..

I thought of the same experiment, than again we all know that foreward power
readings change under mismatch.
Now, if you use a well defined 100 Ohms load and different known lengths
of line (low loss) between TX and the load,
and the meter is nice and accurate (the difference of two inaccurate
values is more inaccurate), it should be possible to work out exactly
how much and at what phase power is reflected from the TRX.

73, Moritz

3131. Re: Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 13:34:23 UTC
From: agodwin@acorn.co.uk
Message-ID: <38qukv$g6k@acorn.acorn.co.uk>
Source record: 115818

In article <38i384$mr3@charm.magnus.acs.ohio-state.edu>,
Steve Bertsch <sbertsch@magnus.acs.ohio-state.edu> wrote:
>I looked up the reference on heat sinks in National Semiconductor's
>_Voltage Regulator Hankbook_ (c)1982.
>
>---------------snip 'n' save--------------------
>

(I did)

However, heatsinks don't only lose heat by radiation - they also
conduct it to air, circulated either forcibly or by convection.

I don't know what the relative heat losses by various methods are,
but I suspect the emissivity doesn't tell the whole story - improving
emissivity by a factor of 15 probably doesn't reduce the thermal
resistance by the same order (especially if some of the emitting
surfaces face each other - black surfaces absorb more radiation, too).

-adrian

3132. Source of ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 15:41:48 UTC
From: dcc@dcs.ed.ac.uk
Message-ID: <CyE3Lp.K2H@dcs.ed.ac.uk>
Source record: 115822
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

My father (GM0RHP) is looking for a source of 4" long by 1/4" dia. ferrite core rods to build some fancy antenna. The only source he knows of is in California, USA - is there anywhere closer or am I best to just order them on plastic and have them pop them in the post in a jiffy bag?

Dave
--
David Crooke, Department of Computer Science, University of Edinburgh
Janet dcc@ed.dcs : Internet dcc@dcs.ed.ac.uk : IP talk dcc@129.215.160.29
Work: JCMB Rm 1408, King's Bldgs, W Mains Rd., Edinburgh EH9 3JZ. 0131 650 5164
Home: 12 (GFR) West Savile Tr, Edinburgh, SCOTLAND EH9 3DZ. +44 131 667 4854

3133. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 15:54:57 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <38r6sh$n0h@proffa.cc.tut.fi>
Source record: 115820

Stan Goldstein N6ULU (stan@cruzio.com) wrote:

> > >I have several identical 2m amplifiers. Could anyone tell me how
> > >feasable it would be to operate them in parallel using phasing cables
> > >on the inputs and outputs similar to phasing two antennas?

> Why can't you avoid the problem on the output side by feeding 2 separate
> antennas?

This should work fine if you are using dipoles (or short yagis) with a
broad radiation angle. A phase error of a few degrees would only shift
the combined radiation pattern with a few degrees, which can be compensated
by turning mechanically by a few degrees.

However, if very narrow beam antennas are used, the phase error must be
kept so low that the peak of the combined radiation pattern is within
the radiation pattern of an individual antenna. In this case, it makes
more sense to use Wilkinson combiners and splitters as quite a lot
of differential phase shift is required until it will cause even
0.5 dB loss and the radiation pattern is only affected by the power
divider at the antennas.

If the power amplifiers are are designed for narrow band operation
with a lot of high-Q band-pass sections, there is going to be a lot
of (differential) phase variations near the operating frequency due
to component tolerances. If more wide band amplifiers are used with
only low-pass filtering to reduce harmonics, the risk for differential
phase response is smaller (and the amplifier efficiency is lower).

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

3134. Re: Paralleling amplifiers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 15:55:51 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <38r6u7$br1@proffa.cc.tut.fi>
Source record: 115821

Zack Lau (KH6CP) (zlau@arrl.org) wrote:

> This might be interesting for 432 EME. Back of the envelope
> calculations indicate that four sets of 100 watt bricks/0.3 dB NF
> preamps/FO-22 yagis (all mast mounted) ought to hear echoes
> quite well. There is a big gain is on receive from eliminating
> phasing line losses ahead of the preamp. An advantage of this system
> would be that RG-213/U could be used for all the coax runs. And,
> if you are homebrewing everything, it isn't necessarily four
> times more expensive to build 4 amps/preamps/antennas.

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

> My only problem with this approach is that it's unlikely the power
> amps and the preamps will have the same phase response. Thus a
> phasing network that works in one direction won't work in the other.
> If you can tweak each amp/preamp to have the same phase response,
> then it ought to work fine.

If you can afford 4 amps/preamps/antennas, you probably can afford
separate RG-213/U coax runs and combiners for receive and transmit.
You can then separately tweak the phase response for amps and preamps
so that the radiation pattern will coincide with each other and hopefully
with the radiation patterns of each antenna.

If the array is also used for terrestrial communication, it might be
quite challenging to tweak the amps high above tree tops :-)

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

3135. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 16:30:23 UTC
From: jeroen@dxcern.cern.ch
Message-ID: <1994Oct28.163023.10935@dxcern.cern.ch>
Source record: 115823

In article <9409267832.AA783201194@mails.imed.com>,
<mack@mails.imed.COM> wrote:
>
>Build an amplifier using a MAR-4 MMIC. This is a small transmitter that should
>have a 50 Ohm output impedance and be capable of 20 mW of output...

The confusion about input and output impedance of
RF amps prompted me to perform the experiment proposed, although
using a MAR-7 rather than a MAR-4.

It *does* have a 50 Ohm impedance looking back into the output.

As others have pointed out however, this is not commonly the case for
transmitters. Those have been designed to drive a 50 Ohm load, which
says nothing about the impedance you'd see looking back into the
output.

The same problem exists with filters. If you have, say, a low-pass
filter designed for an infinite source resistance and a 50 Ohm load,
what's the load seen by the source? Surely not infinity. In fact,
you'd see the 50 Ohm load below cut-off, and something approaching
a short circuit beyond.

I really think we should get our terminology cleaned up.

Best regards,
Jeroen Belleman
jeroen@dxcern.cern.ch

3136. help! need in-amp filter formula

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 17:42:23 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-281094094223@tomkreyche.zdlabs.ziff.com>
Source record: 115825

Dear homebrewers,

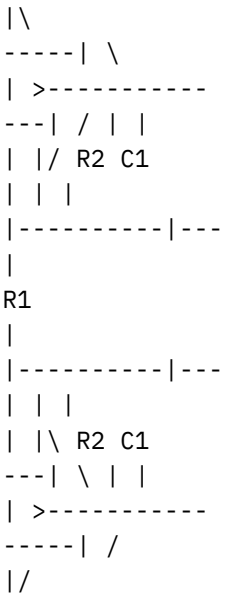
Digital guy needs help with analog circuit design!

I'm driving a differential input delta sigma a/d converter with the "classic" instrumentation amp using three op amps (two in this case since the signal is differential in and differential out. The gain formula is simple, Vout = delta V * ((2*R2/R1) + 1).

I also want to use the circuit to do some low pass filtering (get rid of 60 Hz), nothing fancy needed because of the characteristics of the converter and very low frequency application (25 Hz). I can't find the formula for determining C1 and don't know how to derive it. Looking at some tables, it appears the gain of the circuit (and therefore R1) affects the cutoff frequency.

Thanks,

Tom Kreyche KG6YJ



3137. Where does the power go? Part 3

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 18:42:58 UTC
From: mack@mails.imed.COM
Message-ID: <9409287833.AA783374171@mails.imed.com>
Source record: 115824

Many thanks for the many helpful suggestions. I had intended to take into account the fact that a MAR4is only NOMINALLY 50 Ohms out by finding a frequency at which it IS 50 Ohms. I wasn't explicit on this point. Several correctly pointed out that this experiment only covers the case of what happens to a trasmitter which has a nominal 50 Ohm output. This thread started because of an experiment where the tx end of the line was terminated by a tuner. I'll add that experiment.

Again, thanks for the comments.

Ra Mack
WD5IFS
mack@mails.imed.com

3138. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 20:31:10 UTC
From: browere@einstein.cs.ucdavis.edu
Message-ID: <38rn2e$4ob@huron.eel.ufl.edu>
Source record: 115827

Burt Keeble (burt@teleport.com) wrote:

: I would very much enjoy it if you created that thread. This
: something-out-of-nothing stuff is very entertaining!

: -burt

I agree 100% !!! This is definately a thread worth perpetuating! Such
'homebrews' and investigations can be excellent methods of learning
for relative beginners, like myself.

Eric
(Sorry for the reply mail, Burt- my finger slipped.)

3139. Re: Requesting tunnel diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 20:46:03 UTC
From: ravengre@adcae1.comm.mot.com
Message-ID: <1994Oct28.204603.1534@lmpsbbs.comm.mot.com>
Source record: 115829

The P-channel/N-channel JFET configuration was called a "lambda diode" due to the shape of the negative resistance curve looking like the greek letter lambda. There was also an article in 73 magazine in the 70s I believe. I built one and got it to oscillate to at least 30 MHz. That was several years ago. Negative resistance devices have kind of fallen out of favor due to the proliferation of high-frequency three terminal devices.

Regards,
Greg Raven
KF5N
egr002@email.mot.com

3140. broadcast radio mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 21:10:45 UTC
From: lieser@iccgcc.cs.hh.ab.com
Message-ID: <1994Oct28.161045.1@iccgcc.cs.hh.ab.com>
Source record: 115826

I want to learn a little more about radio electronics, and I thought that one way to do it would be to take one or two of the cheapo transistor radios I have lying around (and never used) and attempt to modify them to pick up, say, the 140 or 150 MHz region instead of 88-108. I'm looking for where I might find information of a general nature on simple transistor receivers, and I'm not finding what I expected. What I really thought I'd find was a book on transistor radio repair, but I suppose nowadays you just throw a cheap radio out and buy another for 5-10 bucks.

Anyway, that's the deal -- any pointers to books, magazine articles, personal experience, etc.?

Thanks,
Ed Lieser

3141. THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 21:51:05 UTC
From: burt@teleport.com
Message-ID: <38rro9$p6e@elaine.teleport.com>
Source record: 115828

Hi,
First, I tried Bob Keys' idea of an aluminium foil capacitor, and
the result was counter productive. Maybe i did it wrong?

Then,

I tried Gary Coffman's suggestion of scraping insulation of the coil
and using a slider contact. Well, i used a wire probe instead. Got
some good results. Two stations now: Alternative Rock (strong), and
Sports (weak). But hey, it's growing.
Here is the updated schematic:

The paper clip provides a spring-loaded holder for the
pencil lead. Sand the part of the paper clip where the
lead is attached. This provides some holding ability for the
holder. Lay the lead against the clip and secure the two
parts by wraping them with fine wire, or thread.
You can also use "invisible" tape. Make sure you have a good
firm anchorage for the lead.

The lead should have a good point where it makes contact with the razorblade. The paper clip does *not* make contact with the blade.

I have determined that any piece of carbon steel will serve as a collector. Ordinary ferrous materials will not. The literature says that regular razor blades work better than blue blades.

Use a braided wire probe. For some reason, it picks up much better than a single point.

Scrape the insulation on the coil to reveal a shiny band of bare copper (@@@@@) running the length of the coil.
Touch the probe to various spots on the band. Keep your hand steady!

So far, I've been able to pick up 970KH (strong), and 1520 KH (weak). Who knows what treasures lie ahead. :)
--

"We are all descended from a long line of determined, resourceful, microscopic tadpoles--champions every one." K.V.

3142. Re: Need mail-order source for MC2831A chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 23:04:52 UTC
From: abergsma@doe.carleton.ca
Message-ID: <CyEo44.F2G@cunews.carleton.ca>
Source record: 115830

Jeff Duntemann (jeffd@coriolis.com) wrote:
: A friend and I have been playing with some FM transmitter designs
: using Motorola's MC2831A IC. We used to get them from DC Electronics
: here in Scottsdale but DC doesn't have them anymore. If anyone
: knows of a reasonably reliable mail-order source for this chip,
: please clue us in.

: Thanks much.

: --Jeff Duntemann KG7JF
: jeffd@coriolis.com

Electrosonic has them...however, they may be out of stock because
supposedly the motorola plant had some major problems...(fire???)
and most rf chips are slow in coming...so i've been told by a
distibutor....any ways, try them....if you can't find an address,
get a hold of me direct...

Electrosonic: in Ottawa, Toronto, Vancouver for sure
throughout the states as well

aj

3143. Re: Local Radio Jammer?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-28 23:10:29 UTC
From: abergsma@doe.carleton.ca
Message-ID: <CyEoDH.Frv@cunews.carleton.ca>
Source record: 115831

fill in stuff on the jamming needs

go to a department store that sells kids toys and look for the
microphones for kids that transmit to the radio....
they are usually FM and are really cheap <$5 sometimes.
tune it to the offending station at home and when you get to work,
just turn it on....(reference the 'capture effect' from previous)
the range is usually @ 5-10 metres max but then just non-chalantly
place it behind the guys radio.....

have fun!

aj

3144. Using video sender for ATV???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 01:02:15 UTC
From: an22190@anon.penet.fi
Message-ID: <010343Z29101994@anon.penet.fi>
Source record: 115832

Hi,
Is it possible to use a video sender (those little units intended to send a
TV signal from one room to another) for Amateur television? Can anyone tel
me where I might be able to purchase an amp suitable for boosting the video
sender output to a few watts or more?
Please e-mail as my USENET feed is less than reliable :(

To find out more about the anon service, send mail to help@anon.penet.fi.
Due to the double-blind, any mail replies to this message will be anonymized,
and an anonymous id will be allocated automatically. You have been warned.
Please report any problems, inappropriate use etc. to admin@anon.penet.fi.

3145. Re: Siliconix DV28120V wanted

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 02:35:49 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <38sce5$j5c@maple.enet.net>
Source record: 115833

> I am looking for a DV28120V FET which should be produced by
> Siliconix, but the local Siliconix dealers don't now this transistor. It is a dual VHF
> power FET which is capable of about 120W HF output.

Siliconix is now owned by Temic, a German company in the Daimler-Benz group. I have the 1994 Temic catalog, and that part is not present. Since you're in Germany, you might contact
a Temic office locally and see if they have a special high-power RF devices catalog. Or perhaps the part is too new (or even unreleased) and not in the standard '94 catalog.

Wish I had better news. I've been looking for a good cheap high-power RF MOSFET myself. Motorola is the only game in town, and they're not cheap. You can use the IRF type FETs (which are designed for switching applications) up to 20M or so with good efficiency. They hardly work at all on 6M, which is what I want to design for.

--73--

--Jeff Duntemann KG7JF

3146. Re: Where does the power go?

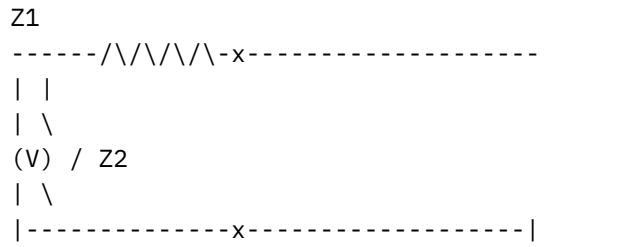
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 13:32:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct29.133204.9660@ke4zv.atl.ga.us>
Source record: 115834

In article <38k6jp$7cr@crl5.crl.com> dmiller@crl.com (Donald J. Miller) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>
>: You've fallen into a common error, Ray. An active transmitter is not a
>: dissipative load, 50 ohms or otherwise. There's no resistor inside its
>: output port waiting to absorb the pulse. As I covered in another post,
>: the pulse will be effectively totally reflected from the working transmitter,
>: neglecting circuit losses. The output impedance of a working transmitter
>: is simply the *loadline* (E/I) of the output stage, transformed in impedance
>: by the output network to appear to be 50 ohms at the output connector. In no
>: way is it actually a physical resistance. All of the RF energy eventually
>: is absorbed by the actual load, perhaps after many reflections if the
>: mismatch is great, just like circulating currents in a tank circuit, or
>: dissipated in circuit and cable losses. It is *not* dissipated in the
>: *output* impedance of the transmitter. An output impedance is not equal
>: to an input resistance looking back into a working transmitter's output
>: port. Remember, power can only be dissipated in a real resistance.
>
>Wrong.
>
>The output of a transmitter is nothing more than the output of an RF
>amplifier. I have measured the output impedance of many an rf amplifier
>by connecting the output to a vector network analyzer and doing a one-port
>measurement.

Sure, a transmitter is nothing more than a large signal amplifier,
and oscillator, modulator, etc but we can ignore the latter items
for our current purposes. The key item is that the amplifier be
working and outputting power. Measurements looking back into a
device not outputting power aren't of interest for this discussion.

>How does a network analyzer work? It sends an RF signal to the device
>under test and measures what gets reflected back. The ratio of the
>reflected signal to the "sent" signal is the reflection coefficient.
>(Reflection coeficient and impedance are related by the smith chart
>transform) A reflection coefficent of 0 (no reflection) is a perfect
>match. If there is no reflection, the power *is* being disappated
>somewhere!

Not necessarily, or at least in a somewhat unexpected place. Let
me work up to this somewhat slowly so that we all are singing from
the same book. We can model a large signal amplifier in several
ways. I'm going to model it as a voltage source and internal impedance
to start. I'm also assuming that the impedances are all "real", IE they
have no reactive component. We'll call this figure 1.



For ease of illustration, I'm going to assign Z1 and Z2 to be 1 ohm each, and set V equal to 2 volts. This is a "matched" situation with 1 ampere of current flowing, and 1 watt of power being dissipated in each of Z1 and Z2. If we change Z2 to 0.5 ohm, then we have 1 1/3 amperes of current flowing in the loop, Z1 has a voltage drop of 1 1/3 volts, and Z2 has a voltage drop of 2/3 volt. That gives a power dissipation at the load of 8/9 watt, and in the source of 1 7/9 watts. If instead we make Z2 equal 2 ohms, then we have a loop current of 2/3 amp, and voltage drops at Z1 of 2/3 volt and at Z2 of 1 1/3 volt. That gives a power dissipation at the source of 8/9 watt and at the load of 1 1/3 watts.

To sum up, for the matched case we have an efficiency of 50%. In the case of the 0.5 ohm load the efficiency is 32%. And in the case of the 2 ohm load the efficiency is 60%. So it appears that our amplifier efficiency improves when the internal impedance is smaller than the load impedance, *not* identical as in the matched case. This has real implications for us because we know that large signal RF amplifiers with efficiencies greater than 50% exist, and are in common use every day at transmitter sites all over the world. We can safely conclude that these transmitters do not have matched real impedances in source and load.

Ok, what about reflections? In the case above I'm implicitly assuming that the "line" to the load is chosen to be the same impedance as the load in each case to prevent a mismatch. I could have alternately assumed the line was infinitely short so that the waves would have no place to stand. :-)

But now lets consider that the line impedance is a nominal 1 ohm so that we'll have a reflection if the load is not 1 ohm also. Note we'll assume the line is lossless, IE the impedance is imaginary or purely reactive. In the matched case there is no difference. But in each of the other cases there is a 2:1 mismatch at the load.

In both cases, a current pulse will flow back down the line toward the generator. If we assume the forward current has a positive sign, this reflected current pulse will have a negative sign. When this current pulse reaches Z1, it will appear as a discharged reactance at point x. This will cause a correspondingly larger current to flow through the impedance from the source to cancel it. That larger current will cause a larger voltage drop across Z1, and cause a larger power dissipation in Z1. This is what we would expect. Note the extra power being dissipated in Z1 is *from the power supply*, not from the reflection.

Now that assumes that Z1 is a real impedance. If Z1 is a reactive impedance, the situation changes. Depending on whether the load mismatch is greater than the line impedance or less than the line impedance, the source will see either a capacitance or an inductance. Now if the output network of the source is also reactive, this reflected reactance will be absorbed by the network. If the network is tuned to resonance under these conditions, the reactance, and the current pulse it stores, are absorbed into the circulating currents of the output tank, and are coupled back out toward the load in sum with the next output pulse. This is called conjugate matching, and no reflected power is dissipated by the amplifier. There will be, of course, circuit losses due to the finite Q of the output network, and there will be losses in the line due to it not being a pure reactance in real circuits. However, this is not the same as the reflection being absorbed into a dissipative "output impedance" of the amplifier.

Let's talk a moment about what we mean by "output impedance". We'll use a vacuum tube for this discussion, though a transistor would serve as well excepting it has to be viewed as a current operated device which alters some of the details, but none of the fundamental principles.

The output impedance of a tube is it's *load line*, IE the dynamic E/I plot at it's output terminal. It is not a resistor, though it satisfies the Ohm's Law equation for how E and I would behave if a real resistor were present. The British call tubes *valves*, and that's an apt name for how a tube works. A valve regulates the flow of water from a high pressure point to a low pressure point. It doesn't *dissipate* any water. If you attempt to backfeed a pulse of water through a valve, you merely reduce the flow from the reservoir for a moment, IE you shift the P/V load line of the valve. That can *look like* a resistance, but you don't dissipate any water. All the real effects are on the flow from the reservoir. The same holds true with a tube. The real part of a tube's impedance is tiny, just contact resistance. It's nowhere near 50 ohms with any well designed socket. The imaginary part of a tube's impedance is mainly capacitive, but that can't dissipate power because reactances can't do that, only real resistances can. Electrical pulses backfeeding into a tube's output network simply cause momentarily greater or lesser surges of current to be drawn from the *power supply*. They don't "dissipate" in the tube "output impedance". A tube's output impedance is merely the optimum load that should be applied to the tube at a given plate voltage and bias setting. It's not at all the same thing as the source impedance shown in figure 1. As the examples show, we want that to be as low as possible. That's why power tubes have large contact surfaces, often silver plated.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3147. Re: Reaction please

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 16:16:05 UTC
From: n921w1@pnet16.navy.mil
Message-ID: <CyFzut.24J@nctams1.uucp>
Source record: 115836

Johan Maas
Hello from Hawaii: A L O H A your messasage is making it Hono.
My name is Chuck AH6IN. Seen you comment and thought I would send you a reply.
73

3148. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 17:30:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct29.173008.10434@ke4zv.atl.ga.us>
Source record: 115837

In article <1994Oct25.204901.20098@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>
>One characteristic of a real resistor is that it gets hot (generates
>heat). In fact, a common technique for measuring actual power
>is to measure how much energy is given off as heat.
>
>Thus, being familiar with amplifiers that generate much more heat
>when putting out RF power than when warming up the filaments, I'd
>conclude that there is real resistance. This is why most linear
>amplifiers have such low efficiencies--there is in fact a resistive
>element that heats up. You can increase the efficiency by driving
>the amplifier so that the tubes act more like switches than
>resistors, but you lose linearity (splatter all over the band
>with SSB--poor amateur practice).

Class AB1 amplifiers routinely achieve 65% efficiency from DC input
to RF output in VHF TV broadcast service. Tubes certainly aren't
100% efficient, but that's not because of some output impedance
resistor. It's because of contact resistance, back bombardment,
and plain old I^2R losses in the tube structure. Every attempt
is made to minimize these losses. Tube contact surfaces are silver
plated, and made large, tube structure lengths are minimized, and
suppressor grids are used in some cases. Flowing 12 amps at 8 kV
can cause a tube, and cavity, to heat, but not 48 kWs worth.

Gary
--
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Lawrenceville, GA 30244 | |

3149. Intermod Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 20:41:12 UTC
From: betts@nyquist.ee.ualberta.ca
Message-ID: <betts.7.0014B06E@nyquist.ee.ualberta.ca>
Source record: 115839

I am running a Kenwood th-28a HT with a J-Pole antenna. My problem is that there is a cellular tower close to my current residence and my receiver is picking up extreme intermod. I am looking for any "cheap" or should I say "homebrew" way of filtering out the intermod... Any help would be appreciated.

NOTE: Buying a new and better transceiver is financially out of the question.

Thanks
Loren
VE6LCB
betts@nyquist.ee.ualberta.ca

3150. Survey help needed here!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 21:34:00 UTC
From: andy.moss@canrem.com
Message-ID: <60.3568.3290.0N1B79BC@canrem.com>
Source record: 115854

Hello everyone! I need your help.

I would like to conduct a survey of power-supply owners here on the net.
I will post the results after a week or two if anyone is interested.
Please send any replies privately to me here, or if you have E-mail
access send to "andy.moss@canrem.com". If you have more than one power
supply that's great and I'd love to hear about them all! Okay, here's
what I am looking for:

- Brand of supply and model number (of if you made it let me know!)

- Current rating if you know it

- Briefly why you chose this supply (or these supplies)

- Good and bad things (if any) about this/these supply(ies).

Thank you very much and I do appreciate it!

Cheers!

Andy
VE3YES
---
* MASTER MAIL! * Amateur Radio Operators do it with much greater frequency!

3151. Millen Grid Dip Meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-29 22:59:44 UTC
From: fdugas@halcyon.com
Message-ID: <fdugas.24.0016FF94@halcyon.com>
Source record: 115840

Howdy Everyone, I just found a Millen Grid Dip meter and as usual It did'nt have the paperwork. If anyone knows where or how I can get the docs. please e-mail me at "fdugas@halcyon.com" thanks for reading this message.
Fred
fdugas@halcyon.com
n7sxk@n7oqn.wwa.usa
hphu32a@prodigy.com
fdugas@attmail.com
Everett,WA. 98203

3152. Tek 1L5 crystal?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 02:27:21 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <CyGs5n.IJC@iat.holonet.net>
Source record: 115838

I just got the Tektronix 1L5 scope plug-in, which is the 50 Hz to 1 MHz spectrum analyzer, at a hamfest. On plugging it into my 533A scope, I got a trace, and it adjusts with the vertical centering control, but nothing like spectrum analyzer behavior! On closer inspection, a crystal is missing from the socket on the left side of the unit.

Can anyone help with a manual for this thing, and/or tips on how it's supposed to work, and/or a crystal or at least the right frequency? Does Tek still support this old stuff?

John Seboldt K0JD
Minneapolis, MN

3153. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 04:55:30 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct30.045530.13040@ke4zv.atl.ga.us>
Source record: 115842

In article <9409267832.AA783201194@mails.imed.com> mack@mails.imed.COM writes:
>I doubt that Tom - AA6BR - had any idea his simple question would stir up such
>controversy.
>
>There were several replies to my response to Tom that take issue with my
>understanding of the theory involved. These were from Moritz, DL5UH, Chuck,
>KE9UW, and Gary, KE4ZV.
>
>Gentlemen, you have thrown down the gauntlet! Since my post was based on my
>understanding of the theory invloved and not actual experiments, I intend to do
>some experiments to actually settle the questions involved.
>
>Proposed experiment #1:
>
>Build an amplifier using a MAR-4 MMIC. This is a small transmitter that should

The MAR series MMICs aren't representative of normal high power
transmitters of the type used in amateur radio and broadcasting.
Due to it's "no tune" unconditionally stable design, it will look
like 50 ohms looking back in it's output port over a wide frequency
range. It's efficiency suffers because of that, but it's purpose
is not to efficiently produce RF power.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3154. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 04:57:52 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct30.045752.13121@ke4zv.atl.ga.us>
Source record: 115841

In article <38rro9$p6e@elaine.teleport.com> burt@teleport.com (Burt Keeble) writes:
>
> I have determined that any piece of carbon steel will serve as
> a collector. Ordinary ferrous materials will not. The
> literature says that regular razor blades work better than blue
> blades.

The reason high carbon steel is needed is that it's the ferric carbides
that act as the semiconductor. These are distributed in domains in the
steel, so you have to hunt for a sensitive spot with your cat's whisker
to get best response.

Gary

--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3155. CMOS Super Keyer 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 11:12:22 UTC
From: garry@goldhill.demon.co.uk
Message-ID: <19941030.111222.15@goldhill.demon.co.uk>
Source record: 115844

The local radio club are interested in making a few of the cw keyers as shown in the ARRL Handbook (page 29.8). The keyer features a cpu with onboard ROM. No problem to program such a beast, if we had the program. Can some kind person Email (UUencode) the binary or better still, the source. I am of course assuming it is PD.

--
Garry
G4FRO @ GB7IMB.#41.GBR.EU
garry@goldhill.demon.co.uk

3156. Re: Using video sender for ATV???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 15:07:01 UTC
From: mgarrett@prairienet.org
Message-ID: <390cql$jml@vixen.cso.uiuc.edu>
Source record: 115843

In a previous article, an22190@anon.penet.fi () says:

>Hi,
> Is it possible to use a video sender (those little units intended to send a
>TV signal from one room to another) for Amateur television? Can anyone tel
>me where I might be able to purchase an amp suitable for boosting the video
>sender output to a few watts or more?
> Please e-mail as my USENET feed is less than reliable :(
>--
>To find out more about the anon service, send mail to help@anon.penet.fi.
>Due to the double-blind, any mail replies to this message will be anonymized,
>and an anonymous id will be allocated automatically. You have been warned.
>Please report any problems, inappropriate use etc. to admin@anon.penet.fi.
>
You can use them but they are not what they claim to be. I bought some
Gemni rabbits and found that the transmitter was defective on the first
set. After getting the second set the range was less than expected here
in the house. They will tune from 902 thru 930 Mhz and only get around
100 feet or so. If they have to go thru any metal the range drops dramaticly.
Power output is 1mw.
I know of a ham in southern, Illinios who runs rabbits between him and
his friend 7 miles away. He has mounted his rabbit at the antenna and
uses a 32 element 902 antenna at 110 feet. His buddy run a 60 foot antenna
and has the same setup. Both have gasfet amps at the tower and run amateur
receivers to get a useable signal.
--
Mark Garrett mgarrett@firefly.prairienet.org
KA9SZX @ N9LNQ.#ECIL.IL.USA.NA

3157. Collins S-line on 30 m.?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 16:15:03 UTC
From: pepperb@govonca.gov.on.ca
Message-ID: <1994Oct30.161503.7182@govonca.gov.on.ca>
Source record: 115850

Hello, I was wondering if anyone has had any positive success as putting a Collins S-line station on 30 m. I came across an old Hints and Kinks in a 1983
issue of QST. It said that basically (if I remember correctly) it was a matter of replacing the xtal in the 14.8 position normally used to receive WWV at 15 megs. with the proper (see manual) xtal to get it at 10 megs (then you have 30
meter operation as well as WWV at the 10 meg. freq.). The Hint said no re-tuning or alignment was necessary.
I would like know if this does indeed work, indeed requires no re-tuning etc.
(major at least) and that there is no problem afterward re. attendant harmonics. I ASSUME this should work, since the S-lines and KWMs were used for other freq. for military use, etc.

Thank you,
Brien
VE3VAW

pepperb@gov.on.ca

3158. Need Variactor Diodes for Doubler

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 21:03:03 UTC
From: drp@netcom.com
Message-ID: <drpCyI7t3.F5K@netcom.com>
Source record: 115845

I am looking for some variactor diodes which can be used in a frequency doubler or trippler circuit. They have been very hard to find as of late and I am and a group of other HAMS need some to make a doubler or trippler to generate a signal on the 2.4 gig HAM band. We might use a 1.2 gig HT into a doubler to get to 2.4 or use an 800 meg commercial radio into a trippler to get 2.4 gig. We have good luck with the few we have been able to find surplus. Any help you might give us to find more would be very much appreciated.

Thanks
Randy Petersen
KE6IZZ
drp@netcom.com
73s

3159. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-30 22:18:59 UTC
From: burt@teleport.com
Message-ID: <39164j$ohr@elaine.teleport.com>
Source record: 115846

In article <1994Oct30.045752.13121@ke4zv.atl.ga.us*,
Gary Coffman <gary@ke4zv.atl.ga.us* wrote:
*In article <38rro9$p6e@elaine.teleport.com*burt@teleport.com (Burt Keeble) writes:
**
** I have determined that any piece of carbon steel will serve as
** a collector. Ordinary ferrous materials will not. The
** literature says that regular razor blades work better than blue
** blades.
*
*The reason high carbon steel is needed is that it's the ferric carbides
*that act as the semiconductor. These are distributed in domains in the
*steel, so you have to hunt for a sensitive spot with your cat's whisker
*to get best response.
*

So far, the only sources of high carbon steel that I have found are
cutting implements (razor blades, carving blades, etc....). I would
like a source that isn't potentially dangerous.

Any suggestions?

-burt

--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3160. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 00:12:25 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Oct31.001225.19727@ke4zv.atl.ga.us>
Source record: 115847

In article <39164j$ohr@elaine.teleport.com> burt@teleport.com (Burt Keeble) writes:
>So far, the only sources of high carbon steel that I have found are
>cutting implements (razor blades, carving blades, etc....). I would
>like a source that isn't potentially dangerous.
>
>Any suggestions?

Chain saw bars, cold chisels, files, etc are all high carbon steel.

Gary

--
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Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3161. HELP: Duroid anybody have rogers' number?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 02:56:08 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <391mc9$aor@usenet.rpi.edu>
Source record: 115848
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Hello,
I remember some time ago, there was a discussion about PCB
materials useful at microwave frequencies. I'm working on a senior
design project, and looking to find some DUROID type material. (for
some components of a 2304/3456 MHz amateur transverter design).

I got the university support number from rogers from somebody
a while back, but lost it. Could anybody help me out?

thanks so much,
-Lance Lascari WS2B

p.s. anybody have a cheap source of rogers 5880 (0.031") material? (:))

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

3162. Re: The Little Razor Blade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 13:38:27 UTC
From: kludge@netcom.com
Message-ID: <kludgeCyJHw3.36L@netcom.com>
Source record: 115851

In article <38p0qj$ip6@elaine.teleport.com> burt@teleport.com (Burt Keeble) writes:
>Scott Dorsey <kludge@netcom.com* wrote:
>*
>*Yup. You can even make a homebrew ribbon microphone with a couple of
>*magnets, a transformer, and the foil from a Wrigley gum wrapper. But
>*that's another thread.
>
>I would very much enjoy it if you created that thread. This
>something-out-of-nothing stuff is very entertaining!

The 1935 copy of "Hints and Kinks for the Radio Amateur" gives complete details on homebrew ribbon mikes. I pretty much copied the design given straight out of the book, although I used modern rare earth magnets for higher output, and halved the width of the ribbon in order to reduce mass.

This issue also has an article on condenser microphone construction, but the design really isn't a good one. If you have access to a good, small machine lathe, check out Williamson's article _A Professional Condenser Microphone_ in the July 1963 issue of Audio. It's surprisingly quiet, even with the tube follower that they describe, and the machine work isn't as bad as you might expect.
--scott

--
"C'est un Nagra. C'est suisse, et tres, tres precis."

3163. Re: Source of ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 15:03:03 UTC
From: tgold@microvst.demon.co.uk
Message-ID: <783615783snz@microvst.demon.co.uk>
Source record: 115853
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

In article <CyE3Lp.K2H@dcs.ed.ac.uk> dcc@dcs.ed.ac.uk "David Crooke" writes:

> My father (GM0RHP) is looking for a source of 4" long by 1/4" dia. ferrite
> core rods to build some fancy antenna. The only source he knows of is in
> California, USA - is there anywhere closer or am I best to just order them
> on plastic and have them pop them in the post in a jiffy bag?

Dave:

If you want a local solution, try posting your request to uk.radio.amateur

--
Tony, AA2PM & G3SKR

3164. QRP transmittor circuit question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 15:12:05 UTC
From: mam@cbnews.att.com
Message-ID: <CyJM86.7rz@nntpa.cb.att.com>
Source record: 115852

This is a QRP Transmitter question:

How come some circuit designs have the 'Final' transistor connected
directly to the output filter and on to the antenna,

but sometimes

the output of the final transistor is sent to a coil, which then has
another coiling wrapped over it, and that then goes to the output filter
and antenna?

Is one better than the other? The direct method is certainly easier -
I have a lot of trouble doing coils and inductance and torids.
I want to build a QRP rig, and easier is easier, but better is better,
so If I have to do it the hard way to to it right, I'm willing (although
not anxious.) Any advice on this acrea would be appreciated.

--Mark KB2els
mccuistion@attmail.att.com

3165. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 17:31:38 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <3939lq$a1l@chnews.intel.com>
Source record: 115855

In article <38qp6u$utn@info2.rus.uni-stuttgart.de>,
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:
>
>... we all know that foreward power readings change under mismatch.

Hi Moritz, I think we all know that forward power readings change
under mismatch _when we are using an antenna tuner_ but the question
was do the forward power readings change when we are using the "50
ohm" output from a transmitter into 50 ohm coax. I think the consensus
is that the output impedance of an ordinary 100w transmitter is
considerably below 50 ohms but greater than zero and, no doubt, complex.

--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3166. Re: Collins S-line on 30 m.?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 18:07:08 UTC
From: jma@ih4gp508.ih.att.com
Message-ID: <CyJuBx.3Mx@nntpa.cb.att.com>
Source record: 115856

In article <1994Oct30.161503.7182@govonca.gov.on.ca>,
Brien Pepperdine <pepperb@govonca.gov.on.ca> wrote:
>
>Hello, I was wondering if anyone has had any positive success as putting a
>Collins S-line station on 30 m. I came across an old Hints and Kinks in a
>1983
>issue of QST. It said that basically (if I remember correctly) it was a matter
>of replacing the xtal in the 14.8 position normally used to receive WWV at 15
>megs. with the proper (see manual) xtal to get it at 10 megs (then you
>have 30
>meter operation as well as WWV at the 10 meg. freq.). The Hint said no
>re-tuning or alignment was necessary.
>I would like know if this does indeed work, indeed requires no re-tuning
>etc.
>(major at least) and that there is no problem afterward re. attendant
>harmonics. I ASSUME this should work, since the S-lines and KWMs were used for
>other freq. for military use, etc.

Well, I did it with my KWM-2. Also used one of the 10 meter positions for
12 meters. Works fine. As I recall the RX peaks up just fine and there
is adequate grid drive for the finals. Might have a little less than optimum
L/C ratio in the final tank circuits, but I use a tuned antenna system so
didn't worry too much about harmonic rejection.

73 es gud luck es hpe cu on 30m.

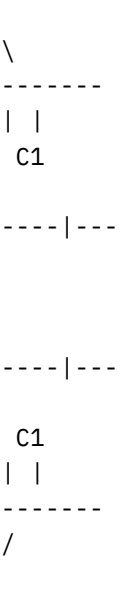
--
Ed Schaefer jma@ih4gp.att.com ham radio: K9JMA aviation: N97178

3167. Re: help! need in-amp filter formula

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 18:45:58 UTC
From: tomb@lsid.hp.com
Message-ID: <CyJw4M.924@hpcvsnz.cv.hp.com>
Source record: 115857

Tom Kreyche (tkreyche@zdlabs.ziff.com) wrote:

: I also want to use the circuit to do some low pass filtering (get rid of 60
: Hz), nothing fancy needed because of the characteristics of the converter
: and very low frequency application (25 Hz). I can't find the formula for
: determining C1 and don't know how to derive it. Looking at some tables, it
: appears the gain of the circuit (and therefore R1) affects the cutoff
: frequency.



The lowpass cutoff will be at 1/(R2*C1) (in radian frequency) or
1/(2*pi*R2*C1) in Hz. Above that, the circuit will do a 20dB/decade
rolloff. HOWEVER, R1 DOES enter into it: it goes back "flat" when the
gain reaches unity. So if the gain is 10 at DC, then there will be a 10:1
frequency range where the gain drops from 10 to 1; then it stays at 1
beyond that. Of course, the "corners" are rounded, but this should give
you close to the right ansewer; there is a 3dB error at the "corner"
frequencies.

If the gain of this thing is high, the output will be close to
differential, even if one input is "grounded." However, as the gain
goes to unity (at higher frequencies), the output looses common mode
rejection. This is something to watch for, if the ADC expects
well-balanced differential inputs.

Finally, if you want better filtering (without the levelling off at unity
gain), then you can put a filter between the inputs: R in series with each
input, and a C across the inputs. This provides no attenuation of common
mode signals with frequency; you can get that with separate C's to ground,

but then any mismatch will cause conversion of common mode to differential signals at frequencies in the vicinity of the filter cutoff.

3168. Re: HELP: Duroid anybody have rogers' number?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 19:52:06 UTC
From: schmaus@ee.ualberta.ca
Message-ID: <393ht6$e69@quartz.ucs.ualberta.ca>
Source record: 115858
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

lascal@cortez.its.rpi.edu (Lance Lascari WS2B) writes:

>Hello,
> I remember some time ago, there was a discussion about PCB
>materials useful at microwave frequencies. I'm working on a senior
>design project, and looking to find some DUROID type material. (for
>some components of a 2304/3456 MHz amateur transverter design).

> I got the university support number from rogers from somebody
>a while back, but lost it. Could anybody help me out?

> thanks so much,
> -Lance Lascari WS2B

>p.s. anybody have a cheap source of rogers 5880 (0.031") material? (:))

>--
>Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
>Mount Greylock Expeditionairy Farce Secret agent #52,342

Try Roger's Marketing/Advertising Coordinator Julie Burchett at (602)961 1382

One of our grad students encountered someone from Rogers at a conference
a couple of years ago and was told that Rogers will supply small
quantities of Duroid free to University researchers in exchange for
copies of papers involving Duroid applications.

Roy Schmaus Email schmaus@bode.ee.ualberta.ca
Room 442 Civil/Electrical Engineering Bldg.
University of Alberta (403) 492-4118/2354
Edmonton,Alberta fax (403) 492-1811

3169. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 20:46:16 UTC
From: kludge@netcom.com
Message-ID: <kludgeCyK1p5.95D@netcom.com>
Source record: 115859

In article <1994Oct31.001225.19727@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <39164j$ohr@elaine.teleport.com> burt@teleport.com (Burt Keeble) writes:
>>So far, the only sources of high carbon steel that I have found are
>>cutting implements (razor blades, carving blades, etc....). I would
>>like a source that isn't potentially dangerous.
>>
>>Any suggestions?
>
>Chain saw bars, cold chisels, files, etc are all high carbon steel.

Cast iron isn't high carbon steel, but works well for a steel detector anyway if you can get a polished section. Still, I always had better luck with copper oxide detectors myself (and copper oxide is everywhere, unfortunately).
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

3170. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-10-31 22:32:55 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CyK6Mv.2o2@freenet.buffalo.edu>
Source record: 115860

In a previous article, burt@teleport.com (Burt Keeble) says:

>In article <1994Oct30.045752.13121@ke4zv.atl.ga.us*,
>Gary Coffman <gary@ke4zv.atl.ga.us* wrote:
>*In article <38rro9$p6e@elaine.teleport.com*burt@teleport.com (Burt Keeble) writes:
>**
>** I have determined that any piece of carbon steel will serve as
>** a collector. Ordinary ferrous materials will not. The
>** literature says that regular razor blades work better than blue
>** blades.
>*
>*The reason high carbon steel is needed is that it's the ferric carbides
>*that act as the semiconductor. These are distributed in domains in the
>*steel, so you have to hunt for a sensitive spot with your cat's whisker
>*to get best response.
>
>So far, the only sources of high carbon steel that I have found are
>cutting implements (razor blades, carving blades, etc....). I would
>like a source that isn't potentially dangerous.
>
>Any suggestions?
>
>-burt
>
Burt... if carbides are indeed what you want, then the harder and more brittle the steel the better your detector should work. Razor blades and files are a good start, saws, chisels, etc... are not as good since these items have a temper drawn to make them tougher. You want things that are glass hard and brittle if possible. You could try to break the blade or file and see just how brittle they are. Better yet, if you can find a carbon case hardened item (a case hardened masonry nail, perhaps) that should work even better. Some case hardened items have a much higher carbon content and are harder because the softer core allows for the needed toughness.

BTW... The old blue razor blades are high carbon steel. The more modern bright razor blades tend to be austenitic stainless steel, also rich in iron carbide. Maybe the reason blue blades don't work as well is that the blue oxide insulates... polish it off ! Why need a razor blade be unsafe to use...? just run the edge over a caborundum stone until it won't shave anymore !

Good luck.
Kurt, n2tte

- -

3171. R-5000 audio beeps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 07:59:12 UTC
From: bhs@fh104
Message-ID: <CyKwup.J3z@ubszh.net.ch>
Source record: 115862
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I am annoyed by the high volume level of the audio beeps of my Kenwood R-5000 RX. Does anybody know how to reduce it?

Thanks and 73, Joerg

3172. VCR Tuner Module for Prog. Weather Recvr. Mods?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 09:39:43 UTC
From: mulveyk@kahu.lincoln.ac.nz
Message-ID: <mulveyk.10.0009A971@kahu.lincoln.ac.nz>
Source record: 115861

Anyone out there who may have converted or adapted a VHF/UHF
VCR tuner Module into a 136 - 138 Mhz weather satelitte
receiver. Problems of IF??? TIA. Ken

3173. Yaesu CAT Interface

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 12:29:48 UTC
From: newmedia@teleport.com
Message-ID: <newmedia.31.000C7F85@teleport.com>
Source record: 115721

I'm looking for a simple interface circuit to connect the FT-840 (Yaesu) to the PC. Requires TTL:RS-232 two way interface. Would prefer not to have to use an external power source. Any ideas?
Jim

3174. Program for desining low pass filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 16:54:55 UTC
From: ignacy@misz.animal.uiuc.edu
Message-ID: <395rsv$1bs@vixen.cso.uiuc.edu>
Source record: 115865

I am looking for formula or at best a PD program to design low pass elliptic filters. I am also looking for help with filters that have all inductances the same.

Ignacy Misztal Ham radio: NO9E, SP8FWB
E-mail: ignacy@uiuc.edu
University Of Illinois 1207 W. Gregory Dr., Urbana, IL 61801, USA
tel. (217) 244-3164 Fax: (217) 333-8286

3175. HELP NEEDED PLEASE ANYONE!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 17:04:08 UTC
From: sdarragh@cisco.com
Message-ID: <sdarragh-011194090408@sdarragh-mac.cisco.com>
Source record: 115863

I need help! I am trying to build a multiband QRP rig. I would like to cover the following bands: 80,40,30,20,15,10. Or at the very least 80,40,15,10(novice bands.) I would like to try and get min 3w and max 5w per band. I would like it to operate on a 12-13.8 power source either battery or supply. By the way JUST CW. I figure it may be to hard to incorporate a SSB for now.

Questions:

#1 Anyone know of any plans for such a beast?
#2 Can I use the same dial to tune all the bands or will I need to incorporate many tuning knobs?

Scott

--
Scott R. Darragh (KE6MGW) On Planet Reebok, you punish their
3535 Garrett Dr rusher, stick the receivers,
Sant Clara, Ca 95054 intimidate their quarterback, and
(408)-526-7173 walk off the field with the
cheerleaders.

3176. Help anyone please!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 17:09:50 UTC
From: sdarragh@cisco.com
Message-ID: <sdarragh-011194090950@sdarragh-mac.cisco.com>
Source record: 115864

I need help! I am trying to build a multiband QRP rig. I would like to cover the following bands: 80,40,30,20,15,10. Or at the very least 80,40,15,10(novice bands.) I would like to try and get min 3w and max 5w per band. I would like it to operate on a 12-13.8 power source either battery or supply. By the way JUST CW. I figure it may be to hard to incorporate a SSB for now.

Questions:

#1 Anyone know of any plans for such a beast?
#2 Can I use the same dial to tune all the bands or will I need to incorporate many tuning knobs?

Scott

--

--
Scott R. Darragh (KE6MGW) On Planet Reebok, you punish their
3535 Garrett Dr rusher, stick the receivers,
Sant Clara, Ca 95054 intimidate their quarterback, and
(408)-526-7173 walk off the field with the
cheerleaders.

3177. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 17:13:27 UTC
From: burt@teleport.com
Message-ID: <395svn$ksa@kelly.teleport.com>
Source record: 115866

In article <kludgeCyK1p5.95D@netcom.com*,
Scott Dorsey <kludge@netcom.com* wrote:
*In article <1994Oct31.001225.19727@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman)
writes:
*>
*>Chain saw bars, cold chisels, files, etc are all high carbon steel.
*
*Cast iron isn't high carbon steel, but works well for a steel detector
*anyway if you can get a polished section. Still, I always had better
*luck with copper oxide detectors myself (and copper oxide is everywhere,
*unfortunately).
*--scott

Well, how do I make a copper oxide detector? Maybe that would be a
better component?

-burt
--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3178. Need phone# of crystal mfr's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 17:31:39 UTC
From: dgf@netcom.com
Message-ID: <dgfCyLnCr.9M8@netcom.com>
Source record: 115720

I know this was discussed recently, but I need phone number(s) for outfit to make custom crystal, such as JAN, International Crystal, etc.; it's been a long time since I have had xtals made, and I've forgotten who the vendors are and where they are located.

73 Dave WB0GAZ dgf@netcom.com

3179. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 17:37:08 UTC
From: jbloom@arrl.org
Message-ID: <1994Nov1.173708.10808@arrl.org>
Source record: 115719

Cecil_A_Moore@ccm.ch.intel.com wrote:
[snip]
: ohm" output from a transmitter into 50 ohm coax. I think the consensus
: is that the output impedance of an ordinary 100w transmitter is
: considerably below 50 ohms but greater than zero and, no doubt, complex.

In an earlier post you said that with a properly tuned antenna tuner in line, a conjugate match would be achieved. (I'm paraphrasing, but I think that's accurate.) Presumably, the impedance looking into the antenna tuner is 50 ohms. If the output impedance of the transmitter is not 50 ohms, how is there a conjugate match? (Hint: there isn't.)
--
Jon Bloom KE3Z jbloom@arrl.org

3180. Re: Intermod Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 18:31:33 UTC
From: lascal@cii3112-13.its.rpi.edu
Message-ID: <3961i5$bna@usenet.rpi.edu>
Source record: 115867

loren betts (betts@nyquist.ee.ualberta.ca) wrote:
: I am running a Kenwood th-28a HT with a J-Pole antenna. My problem is that
: there is a cellular tower close to my current residence and my receiver is
: picking up extreme intermod. I am looking for any "cheap" or should I say
: "homebrew" way of filtering out the intermod... Any help would be appreciated.

: NOTE: Buying a new and better transceiver is financially out of the question.

Well, have you determined that the intermodulation is
occurring in your transceiver? If you have, then a filter is the
answer... but there are many commercial sites that I know of that have
serious intermod problems of their own. I.E. multiple transmitters
are mixing IN ONE OF THE POWER AMPLIFIERS... thus radiating crap.
That's why many installations use isolators on the PA outputs.

Anyway, since you're so close, it might actually be on-air
signals that you're hearing. (i.e. does this happen with other
radios, are the signals still perceptible without the ant. attached
(depending on how close you are)...etc).

I was thinking of designing some simple filters for this type
of application... to write up in our local newsletter. If you don't
get any other good responses, let me know and maybe I'll do that work
early.

Lance

--
Lance Lascari WS2B <lascal@rpi.edu> Senior EE @ Rensselaer Polytechnic Inst.
Mount Greylock Expeditionairy Farce Secret agent #52,342

3181. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 18:42:45 UTC
From: kludge@netcom.com
Message-ID: <kludgeCyLqnA.CA2@netcom.com>
Source record: 115718

In article <395svn$ksa@kelly.teleport.com> burt@teleport.com (Burt Keeble) writes:
>
>Well, how do I make a copper oxide detector? Maybe that would be a
>better component?

Take a piece of copper plumbing that is old and corroded. Shine up one
corner and solder a wire to it. Now, file another wire to a point, and
rest it very lightly on the surface of the pipe. You may have to probe
around to find a good spot, but this is a very reliable rectifier.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

3182. PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 20:46:39 UTC
From: snorris@harp.aix.calpoly.edu
Message-ID: <1994Nov01.204639.125036@zeus.aix.calpoly.edu>
Source record: 115722

I'm working on a project that requires me to make a PC board and I want
it to be as hassle free as possible. I have seen many ads about some
special paper which you can print with a laser printer, iron it onto the
PC board, peel it off and then etch. Has anyone used this technique? If
so, it it reliable? My project is all surface mount and at very high
frequencies so the traces must be small and sharp.
If anyone has any experience/tips/brands/etc. I would appreciate it very
much if you could E-mail me.

Thanks,

Sean

Sean Norris snorris@trumpet.aix.calpoly.edu
--KE6BTE-- Loyalty, above all else.

3183. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 22:18:53 UTC
From: Philip Peake <philip@wv.mentorg.com>
Message-ID: <396esd$ib0@hpbab.wv.mentorg.COM>
Source record: 115723

> In article <1994Oct30.045752.13121@ke4zv.atl.ga.us*,
> Gary Coffman <gary@ke4zv.atl.ga.us* wrote:
> *In article <38rro9$p6e@elaine.teleport.com*burt@teleport.com (Burt Keeble) writes:
> **
> ** I have determined that any piece of carbon steel will serve as
> ** a collector. Ordinary ferrous materials will not. The
> ** literature says that regular razor blades work better than blue
> ** blades.
> *
> *The reason high carbon steel is needed is that it's the ferric carbides
> *that act as the semiconductor. These are distributed in domains in the
> *steel, so you have to hunt for a sensitive spot with your cat's whisker
> *to get best response.
> *
>
> So far, the only sources of high carbon steel that I have found are
> cutting implements (razor blades, carving blades, etc....). I would
> like a source that isn't potentially dangerous.

Maybe someone already said this ... but ... have you tried galena
(sp ??), which is a lead sulphide crystal, also known as fool's gold ?

It was the basis of the detector in many early crystal sets.
Chunks of it are available in most "nature" shops, or anywhere else
that sells interesting minerals.

Clamp it on one side, and use a "cat's whisker" to lightly touch it.
You ay need to move it around for best sensitivity.

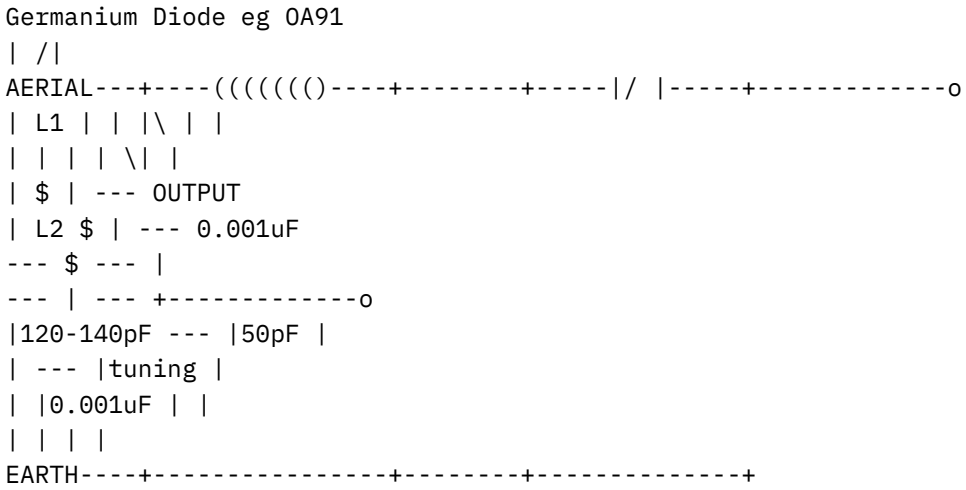
Philip

3184. FM Crystal Set

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-01 22:45:11 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <396gdn$huc@franklin.cc.utas.edu.au>
Source record: 115725

Hello,

Here is a circuit for an FM crystal set which appeared in a small
book entitled "Modern Crystal and Transistor Set Circuits for Beginners"
published in 1973 by B.B. Babani, London. I picked it up in '76 while on
holiday in England.



L1 is described as 5 turns, 25mm diameter, spaced out 35mm.
L2 is described as 46 turns, 8mm diameter close wound.
Frequency range was stated as 63-70MHz. The author wanted to listen to
TV sound on channel 2.

The circuit is described as using the slope detection method for demodulating
FM. Could someone please explain how this works, in general and for the above
circuit?

Ian

3185. Re: Program for desining low pass filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 00:08:22 UTC
From: mack@ncifcrf.gov
Message-ID: <CyM5py.88M@ncifcrf.gov>
Source record: 115728

In article <395rsv$1bs@vixen.cso.uiuc.edu> ignacy@uiuc.edu (Ignacy Misztal) writes:
>I am looking for formula or at best a PD program to design low pass
>elliptic filters. I am also looking for help with filters that have
>all inductances the same.
>
>
>Ignacy Misztal Ham radio: NO9E, SP8FWB
>E-mail: ignacy@uiuc.edu
>University Of Illinois 1207 W. Gregory Dr., Urbana, IL 61801, USA
>tel. (217) 244-3164 Fax: (217) 333-8286
>

If you just want to design an elliptic low pass filter, Maxim make
4 op-amp chips with fixed internal caps and you provide 8 resistors
and they give you a program to do it.
I can find Maxim's address if you want (at home)

Joe Mack NA3T
mack@ncifcrf.gov

3186. Re: Need phone# of crystal mfr's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 00:25:01 UTC
From: tomb@lsid.hp.com
Message-ID: <CyM6Hq.6Dr@hpcvsnz.cv.hp.com>
Source record: 115729

David Feldman (dgf@netcom.com) wrote:
: I know this was discussed recently, but I need phone number(s) for outfit
: to make custom crystal, such as JAN, International Crystal, etc.; it's
: been a long time since I have had xtals made, and I've forgotten who the
: vendors are and where they are located.

We need an FAQ for this. ;-)

ICM: 1-800-ICM-XTAL
JAN: 1-800-JAN-XTAL

Notice how similar the numbers come out...

3187. Re: Intermod Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 01:40:04 UTC
From: jdevenport@lanl.gov
Message-ID: <396qlk$2u5@newshost.lanl.gov>
Source record: 115724

Are you SURE of the "cellular" tower being the source of the interference?
if so, or if you know the main source of RFI and its frequency range, you
can knock the bad interference down 20 to 30 dB (WADS!) with the installation
of a simple coax notch filter.
For 800 MHZ (cellular), merely cut a piece of RG-58 to approx. 2 1/4 inches, put a bnc
fitting on
one end, leave the other end open, and install it wit a tee fitting on your
HT ant connection, the jpole coax going to the other port of the tee.
For 450 MHZ, make the coax stub 6 1/4" long
for 150 MHZ, make the stub 18 3/4" long
The basic trick is to cut a coax stub to the 1/4 wave electrical length
so the coax will resonate at the offending frequency. Since coax has a
"velocity factor" in that rf travels more slowly thru it than solid
copper wire or air, the velocity factor has to be "factored in".
RG58 and may other types of flexible coax has a velocity factor of .6667
so you first find the 1/4 wave length:
(example) 850 MHZ= 468 divided by 850; this is the half wavelength,
then divide by 2 to get the 1/4 length (or simply start by dividing the
desired freq into 234) , which should come out close to .275 feet or 3.3
inches, then multiply that by the velocity factor (3.3 X .67= 2.21 inches
or very close to 2 1/4 inches. It helps to include the effective length
of the BNC tee at this UHF frequency range...
these make very effective notch filters but do have insertion loss,
especially at frequencies near the notch frequency.... however getting rid
of that much rfi may well outweigh any losses incurred.
73,
Jim Devenport

3188. Re: FM Crystal Set

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 01:57:45 UTC
From: jdevenport@lanl.gov
Message-ID: <396rmp$2u5@newshost.lanl.gov>
Source record: 115734

Ian, the described circuit is only a regular run of the mill AM detector. I'd be interested in the results of such a circuit on FM, though since broadcast FM is SO broad it might well detect usable audio with slope detection. Slope detection of FM works on the principle that you tune to the "side" of an FM sig with an AM receiver and the frequency "wobbles" of the FM carrier come across as amplitude variations in the receiver since the signal strength is, in fact, varying as the frequency slides back and forth in and out of the AM receivers bandwidth (VERY wide in the case of similar crystal detectors with NO IF filtering). The audio thus recovered is not as loud as when using a good FM detector but if you have sufficient audio gain it produces quite usable results.... years ago while in college in the mid 1970's I homebrewed a simple walkie-talkie in a bud minibox using a VHF engineering transmitter strip and a simple converter in front of a garden variety AM protable transistor receiver.... it was so quiet with no signal present I didn't need squelch, it was very stable, and I could even separate fairly close (in frequency) repeaters so long as they weren't PHYSICALLY close! Wish I hadn't cannibalized it, that thing was a kick to use in front of old timer appliance op hams.....
I also (and you of course still can) have listened to many a 10 meter FM QSO with a normal AM rx. The trick is to tune in for maximum signal strength, then tune off to the "side" of the signal slowly until the audio becomes intelligible. It usually takes some tinkering to get the best audio, but if tuned properly it will produce surprisingly good audio.
That crystal detector circuit likely would be so broad..... it may work fine since FM broadcast is on the order of 100 KHZ wide. And if 2 stations are fairly close to each other you likely know the result.... more than one song at a time or none, depending on how far apart they are in frequency.
Jim Devenport WB5AOX

3189. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 01:59:06 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov2.015906.8454@ke4zv.atl.ga.us>
Source record: 115739

In article <395svn$ksa@kelly.teleport.com> burt@teleport.com (Burt Keeble) writes:
>
>Well, how do I make a copper oxide detector? Maybe that would be a
>better component?

Think pennies. That green coating old copper pennies get is a copper
oxide.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3190. Help on ARK4

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 03:09:47 UTC
From: Tun Hung <TXH112@psuvm.psu.edu>
Message-ID: <94305.220947TXH112@psuvm.psu.edu>
Source record: 115737

Hi:
Does anyone has the experiences building ARK4- the synthesized 40 meter kit from S & S Engineering? It looks pretty good from the brochure and I would like to know more about it before I buy one. Any help would be appreciated

Tun N3OCZ

3191. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 04:13:00 UTC
From: wk@muscle.frc.maf.govt.nz
Message-ID: <WK.94Nov2171300@muscle.frc.maf.govt.nz>
Source record: 115740

In article <1994Oct29.133204.9660@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

> Z1
> ------/\/\/\/\-x--------------------
> | |
> | \
> (V) / Z2
> | \
> |--------------x------------------|
>
> For ease of illustration, I'm going to assign Z1 and Z2 to be 1 ohm
> each, and set V equal to 2 volts. This is a "matched" situation with
> 1 ampere of current flowing, and 1 watt of power being dissipated in
> each of Z1 and Z2. If we change Z2 to 0.5 ohm, then we have 1 1/3
> amperes of current flowing in the loop, Z1 has a voltage drop of
> 1 1/3 volts, and Z2 has a voltage drop of 2/3 volt. That gives a
> power dissipation at the load of 8/9 watt, and in the source of
> 1 7/9 watts. If instead we make Z2 equal 2 ohms, then we have a
> loop current of 2/3 amp, and voltage drops at Z1 of 2/3 volt and
> at Z2 of 1 1/3 volt. That gives a power dissipation at the source
> of 8/9 watt and at the load of 1 1/3 watts.

This is a nice and easy way to model a transmitter.

In fact, in the 3rd case (Z2 = 2), a voltage drop of 2/3 V across Z1 at a current of 2/3 A will cause a dissipation at the source of 1 1/3 W. The load will drop 4/3 V and thus dissipate 8/9 W.

> To sum up, for the matched case we have an efficiency of 50%.
> In the case of the 0.5 ohm load the efficiency is 32%. And in
> the case of the 2 ohm load the efficiency is 60%.

The figures are:

Z2 Psource Pz1 Pz2 Efficiency

0.5 2.67 W 1.78 W 0.89 W 33.33 %
1 2.00 W 1.00 W 1.00 W 50.00 %
2 1.33 W 0.44 W 0.89 W 66.67 %

> So it appears
> that our amplifier efficiency improves when the internal impedance
> is smaller than the load impedance, *not* identical as in the matched
> case. This has real implications for us because we know that large
> signal RF amplifiers with efficiencies greater than 50% exist, and
> are in common use every day at transmitter sites all over the world.

> We can safely conclude that these transmitters do not have matched
> real impedances in source and load.

I agree, to extract the maximum amount of power from our transmitter, the load should be equal to the impedance of the tranmitter. However, dissipation in the tranmitter would be quite high, and the efficiency would be no more than 50 %.

In practice, solid state tranmitters are built with a much lower driving impedance than the 50 ohms they are designed to work into. This reduces the dissipation and makes it more efficient. To protect the tranmitter from RF power hungry hams, overload protection is put in, shutting down the tranmitter when the load drops below the recommended 50 ohms.

Wilbert, ZL2BSJ.

--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

3192. QRP transmittor circuit q

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 09:51:00 UTC
From: hua.chu@channel1.com
Message-ID: <40.2775.2425@channel1.com>
Source record: 115727

MA>on

MA>This is a QRP Transmitter question:

MA>How come some circuit designs have the 'Final' transistor connected
MA>directly to the output filter and on to the antenna,

MA>but sometimes

MA>the output of the final transistor is sent to a coil, which then has
MA>another coiling wrapped over it, and that then goes to the output filter
MA>and antenna?

That's called an RF 'transformer'. It's a device used to match
the impedences of the two circuits.

MA>Is one better than the other? The direct method is certainly easier -

The engineer who designed it would say so, but others would differ. 8>).

-H

---
* OLX 2.1 * It's only a hobby ... only a hobby ... only a

3193. antenna tuner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 14:13:00 UTC
From: Bob.Klug@f239.n109.z1.fidonet.org
Message-ID: <f41_9411011136@blkcat.fidonet.org>
Source record: 115730

Does anybody have plans for an easy-to-build antenna tuner?
I am new to the shortwave listening hobby. For my birthday last year my girlfried bought me a "boat anchor" --a Blaupunkt model 40103 AM/FM/Sw radio & phonograph player that is probably 25 years old. She got it at a local flea market for $25. I bought a 70 ft piece of stranded copper wire for an antenna and hung it in my attic. I get pretty good reception, but I read Harry Helm's book on shortwave listening and he recommends using an antenna tuner. I got plans for one from Panaxis but it involves winging 44 turns of wire around a core. This will be my very first attempt at building any equipment and I am afraid winding 44 turns of wire around a core and making 12 taps from it will be more difficult for me to get working than I realize.

Can anybody offer me an easier-to-build model, or give me any other advice or encouragement? Thanks.

Bob Klug

Fidonet: Bob Klug 1:109/239
Internet: Bob.Klug@f239.n109.z1.fidonet.org

3194. Re: VCO in Key Components of Mod RCVR Design (QST)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 14:41:12 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <3988e8$klb@bmerha64.bnr.ca>
Source record: 115731

Does anyone have any information on the design of the VCO diagrammed in the second part of the series "Key Components of Modern Receiver Design"? I am particularly interested in how the 9.2nH coil is tapped and any information on the source biasing scheme for the FET oscillator.

Bill Kirkland

3195. 40 - 70 MHz crystal filter design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 14:46:15 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <3988nn$klb@bmerha64.bnr.ca>
Source record: 115732

Are there any articles or programs detailing design of crystal filters in the 40 - 70 Mhz range.

Bill Kirkland

3196. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 15:05:52 UTC
From: zlau@arrl.org
Message-ID: <1994Nov2.150552.5065@arrl.org>
Source record: 115733

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Class AB1 amplifiers routinely achieve 65% efficiency from DC input
: to RF output in VHF TV broadcast service. Tubes certainly aren't
: 100% efficient, but that's not because of some output impedance
: resistor. It's because of contact resistance, back bombardment,
: and plain old I^2R losses in the tube structure. Every attempt
: is made to minimize these losses. Tube contact surfaces are silver
: plated, and made large, tube structure lengths are minimized, and
: suppressor grids are used in some cases. Flowing 12 amps at 8 kV
: can cause a tube, and cavity, to heat, but not 48 kWs worth.

8000V/12 amps*.35=233 ohms

Can you further break down these losses--how much is
due to to each factor? I have to admit that I'm surprised
that contact losses would be worth mentioning, particularly
since they involve large, silver plated surfaces. I use
cheap molex connectors with little tin plated contacts, and
they aren't significant in a circuit with involving 2 amps
at 12 volts (12V/2amps=6 ohms).
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3197. Re: Source of ferrite cores

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 15:09:39 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <CynBG4.Kou@hpqmoea.sqf.hp.com>
Source record: 115746
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

David Crooke (dcc@dcs.ed.ac.uk) wrote:
: My father (GM0RHP) is looking for a source of 4" long by 1/4" dia. ferrite
: core rods to build some fancy antenna. The only source he knows of is in
: California, USA - is there anywhere closer or am I best to just order them
: on plastic and have them pop them in the post in a jiffy bag?

: Dave

I can probably help. I may even have something suitable in my junk
box. I've not seen your dad for some time.

There IS life in the UK on this group!

Cheers
David GM4ZNX

3198. Communications Quarterly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 16:33:47 UTC
From: TFG073@email.mot.com
Message-ID: <TFG073-0211941734460001@145.6.2.228>
Source record: 115735

I recently found "Communications Quaterly" referenced in an
technical article.
What type of journal is it ? Where can I get it and what is the
price?

Thanks

Ralf

3199. Re: Program for desining low pass filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 16:46:06 UTC
From: ignacy@misz.animal.uiuc.edu
Message-ID: <398foe$bp4@vixen.cso.uiuc.edu>
Source record: 115736

In <CyM5py.88M@ncifcrf.gov>, mack@ncifcrf.gov (Joe Mack) writes:
>In article <395rsv$1bs@vixen.cso.uiuc.edu> ignacy@uiuc.edu (Ignacy Misztal) writes:
>>I am looking for formula or at best a PD program to design low pass
>>elliptic filters. I am also looking for help with filters that have
>>all inductances the same.
>>

I forgot to say that these are transmitting filters made of coils and
capacitances.

Ignacy Misztal Ham radio: NO9E, SP8FWB
E-mail: ignacy@uiuc.edu
University Of Illinois 1207 W. Gregory Dr., Urbana, IL 61801, USA
tel. (217) 244-3164 Fax: (217) 333-8286

3200. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 16:59:24 UTC
From: bodafu@ccvax.sinica.edu.tw
Message-ID: <bodafu.675.01E3E554@ccvax.sinica.edu.tw>
Source record: 115726

Fools gold is iron pyrite, not lead sulfide. You want to use lead sulfide for your detector. You can make it by mixing lead filings and sulfur powder. Put the mixture in a short length of 1/4 inch copper tube and then torch it till the powders melt.

DO THIS OUTSIDE, please, burning sulfur and lead fumes are no joke. Make sure that both ends of the tube are open to prevent released gases from blowing MOLTEN STUFF FROM HELL into your face.

WEAR EYE PROTECTION

When it cools, break it and bed a piece in a blob of solder.

David

____D__a__v__i__d_____B__e__r__g__a__r__t_____
bodafu@ccvax.sinica.edu.tw

3201. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 17:29:12 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CynHwp.FCq@freenet.buffalo.edu>
Source record: 115738

In a previous article, bodafu@ccvax.sinica.edu.tw (David L. Bergart) says:

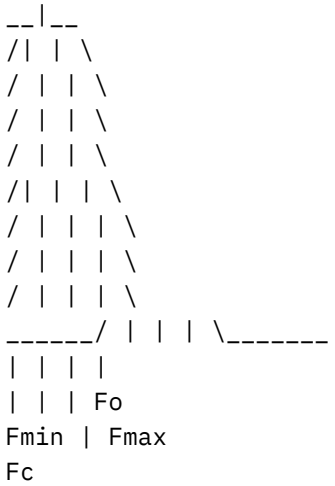
>Fools gold is iron pyrite, not lead sulfide. You want to use lead sulfide for
>your detector. You can make it by mixing lead filings and sulfur powder. Put
>the mixture in a short length of 1/4 inch copper tube and then torch it till
>the powders melt.
>
David,
You are, of course, right about fools gold being iron pyrite and that
galena, lead sulfide, is the traditional detector. Sure you could make
some lead sulfide by the method you describe... but, would it be galena !
Would it work as a detector ? ... did you try it ?
Kurt
--

3202. FM Crystal Set

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 17:43:27 UTC
From: mack@mails.imed.COM
Message-ID: <9410027838.AA783802842@mails.imed.com>
Source record: 115747

Ian Mitchell asked how the crystal set works in digest #323.

He correctly mentions that to receive FM it acts as a slope detector. A slope detector uses the selectivity curve of the tuned circuit to convert the FM into AM which is then detected by the diode. If all of the energy of the FM circuit is below the center frequency (Fo) of the tuned circuit, then frequencies closer to Fo will have higher amplitudes than lower frequencies. This has the effect of amplitude modulating the signal. Below is a model of what the selectivity curve of a single tuned circuit response looks like with Fo, Fc (the carrier of the FM), Fmax (high freq for maximum deviation of FM signal), and Fmin (low freq for maximum deviation of FM signal) shown. The name slope detection comes from using the slope of the Vout vs Vin curve as shown below.



There is an error in Ian's schematic. The diode detector MUST have a DC return to ground. Because of that I suspect that the .001 uF capacitor with L2 to ground should be deleted.

Ray Mack
WD5IFS
mack@mails.imed.com

3203. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 18:41:52 UTC
From: tomb@lsid.hp.com
Message-ID: <CynL9t.GBs@hpcvsnz.cv.hp.com>
Source record: 115741

Oh, dear. I should know better than to jump in here, but...

First, if you model a source as a Thevenin or a Norton equivalent, you should be aware that it is just a model to tell you what you can measure at the terminals. It does NOT tell you, necessarily, what is going on inside the "black box" that is the source. Consider, for example, a 1 volt open circuit, 1 ohm output resistance source. If you model this as a Thevenin equivalent, then with an open-circuit load, no power is dissipated in the source resistance, and if you short the output, 1 watt (1 volt across 1 ohm) is dissipated. However, an equally good model _in_terms_of_the_ _performance_measured_at_the_output_port_ is a Norton model: a 1 amp current source, shunted by a 1 ohm resistor. You can't tell the difference between the Norton and the Thevenin sources from the performance at the terminals. But note that the Norton source would appear to dissipate 1 watt in its internal resistance when the output is _open_ and dissipate nothing if the output is _shorted_.

What about _practical_ sources? Well, it depends tremendously on just how they are built. It's quite possible to build a source with essentially zero output resistance, and you can even make the output resistance negative. A three-terminal linear regulator circuit is a good example. An LM309 can have an output resistance in the .01 ohm region easily. But the power it dissipates depends heavily on the supply voltage. It's clearly not just the load current through an 0.01 ohm resistance. At the other extreme, it's possible to design a current source of say 1 amp with an output resistance of megohms. The actual power dissipation in the circuit goes _up_ as the load resistance drops, so from the paragraph above, you might think you should model it as a voltage source in series with a resistance, but a 1 million volt source in series with a megohm would dissipate LOTS of power when delivering current to, say, a 1 ohm load. SO-- DO NOT assume that you can calculate the power dissipation in a real source from a Thevenin or Norton model of the output terminal performance of that source. Though I've used DC examples here, the same is true of AC (RF) sources as well.

As for power dissipated in a tube or a transistor--well, all I can say is don't believe everything you read. If you've had the opportunity to watch a tube like an 813 in operation at high powers, and seen the plate glowing red, please ask yourself, is the significant power dissipation in contacts and in wires, or is there something special going on at that plate?

It seems to still be true that P=V*I, and that works even for very short time periods. If you are willing to figure out the Vs and Is for all the points in a cycle and add up the powers at each point, you can get the power dissipated in each element: tube (or transistor or power mosfet or

tunnel diode or varactor or whatever), parasitic resistances, and load resistance. You can put in reactances wherever you want; you can even put in non-linear elements. If your mathematical model accurately represents the components you are using, then you can calculate powers and efficiencies quite accurately. You will probably even understand why that tube plate gets so hot when you are done.

73, K7ITM

3204. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 18:46:17 UTC
From: jdc@cci.com
Message-ID: <CynLH5.C74@sunsrvr6.cci.com>
Source record: 115671

In article <1994Nov01.204639.125036@zeus.aix.calpoly.edu>,
Sean Norris <snorris@harp.aix.calpoly.edu> wrote:
>I'm working on a project that requires me to make a PC board and I want
>it to be as hassle free as possible. I have seen many ads about some
>special paper which you can print with a laser printer, iron it onto the
>PC board, peel it off and then etch. Has anyone used this technique? If
>so, it it reliable? My project is all surface mount and at very high
>frequencies so the traces must be small and sharp.
>If anyone has any experience/tips/brands/etc. I would appreciate it very
>much if you could E-mail me.

I've done toner transfer with regular paper and there are problems with
the toner not sticking. There is paper with a water soluble coating that
is said to work well.

Anybody know what the paper is coated with?

73...Jim N2VNO

>
>Thanks,
>
>Sean
>
>---
>Sean Norris snorris@trumpet.aix.calpoly.edu
>--KE6BTE-- Loyalty, above all else.
>---
>

3205. Re: Communications Quarterly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 19:17:50 UTC
From: mcross@cv.hp.com
Message-ID: <CynMxq.Guz@hpcvsnz.cv.hp.com>
Source record: 115742

Ralf Gregory (TFG073@email.mot.com) wrote:
: I recently found "Communications Quaterly" referenced in an
: technical article.
: What type of journal is it ? Where can I get it and what is the
: price?

Communications Quarterly is a publication of CQ Communications, Inc.
76 North Broadway Hicksville, NY 11801

Subscriptions are $29.95 per year, two yrs for $56.95 (USA)

73
Minor
--
-- __
Insert Standard Disclaimer notice here: / /\
/ / \
Minor Cross KD7YJ __ /_/ /\ \
/_/\ __\ \ _\ \
Integrated Circuits Business Division - CVO \ \ \/ /\\ \ \/ /
1050 NE Circle Blvd \ \ \/ \\ \ /
Corvallis, OR USA 97330-4299 \ \ /\ \\ \ \
Mailstop 2UAA30 \ \ \ \ \\ \ \
Telephone: (503) 715-2044 FAX:(503) 715-3221 \ \ _\/ \ \ \
\ \ \ _\/
e-mail: mcross@cv.hp.com _\/

3206. Re: Communications Quarterly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 21:29:04 UTC
From: lieser@iccgcc.cs.hh.ab.com
Message-ID: <1994Nov2.162904.1@iccgcc.cs.hh.ab.com>
Source record: 115743

In article <TFG073-021194173446001@145.6.2.228>, TFG073@email.mot.com (Ralf Gregory) writes:
> I recently found "Communications Quaterly" referenced in an
> technical article.
> What type of journal is it ? Where can I get it and what is the
> price?

Hi Ralf,

It's called "Communications Quarterly -- The Journal of Communications Technology". It's published 4 times a year by CQ Communications, Inc. Domestic subscriptions per year are $29.95, foreign is $39.95. They are at 76 North Broadway, Hicksville, NY 11801. Phone (516) 681-2922. The issue I'm looking at (Summer '94) has 112 pages, with articles on GPS, The Solar Spectrum, Dummy Antennas, 100 Watt HF MOSFET Amplifier, and Designing the Long Wire Antenna System, among other things. It's more technical than your average ham magazine, I would say. More expensive too -- hard to find on a newsstand, and $9.95 if you do. I couldn't resist, though -- really great article on GPS.

Ed Lieser

3207. Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-02 23:52:22 UTC
From: guy@macadam.mpce.mq.edu.au
Message-ID: <3998nm$c4c@sunb.ocs.mq.edu.au>
Source record: 115744

I have followed the thread on reflected power in a transmission line
with interest and curiosity, hoping to learn something.
I have also thought deeply about the question on buses and in the shower!
For any new readers who didn't follow the earlier discussions,
the question is about reflected power from a mismatched load (antenna)
driven through a transmission line from a high power tube amplifier,
though it applies to any power level and any amplifier type.
What happens to the reflected power?
Is it dissipated in the amplifier? Where?
Or is it reflected again at the possible mismatch looking back
into the amplifier from the line?

I believe the problem lies in the question being wrongly posed,
though it seems a perfectly reasonable question to ask.
A transmission line is a wondrous invention which, if infinitely
long to avoid reflections, has the property that the input
voltage and forward current are in phase and have a definite
ratio - the characteristic impedance, usually 50 ohms for coax.
The infinite line can then be terminated at any point by 50 ohms
without the input seeing any difference - the line is matched.

Please forgive the long and well-known introduction;
I am getting to the point!

If the load is not 50 ohms (and real), a forward pulse is partly
reflected and returns to the input, where it may be reflected
again depending on the load it sees looking back into the source.
The speed on the line is about 1ns/foot in air, and about 2/3
of that in solid line, so for any reasonable line the round trip
time is sub-microsecond. Unless our transmitter is modulated
at a frequency above 1MHz, so that the amplitude can vary
significantly in less than a microsecond, the returning wave
will see the original amplitude still coming out, but several
cycles later depending on the line length. This applies to keying
too unless you want to splatter over the whole band (or HF spectrum).

So we are realistically talking about a steady key-down state of
the amplifier, except perhaps for UHF TV signals.

In a mismatched line (or a matched one) you can open the line at
any point and measure the signal. The ONLY things you can measure
are the voltage, the current, and their phase relationship.
At the load end, this defines the complex load impedance,
and if this were the power frequency of 50 or 60 Hz, we would
mutter about power factor to calculate the absorbed power,
but we would NOT talk about reflected power back down the wires.

A mismatched transmission line has the property that the apparent
load impedance varies along the line, and we have a standing wave.
The apparent impedance is complex except at the nodes and antinodes
where it is real but smaller (50 / SWR) at a node, or larger
(50 x SWR) at an antinode.

We find it MATHEMATICALLY convenient to analyze this standing wave
in terms of a forward wave and a refected wave, though the definition
of SWR refers only to the voltage ratio at antinode and node, and
doesn't need the formal idea of 2 opposing waves.

We have even designed an instrument to measure SWR, which we tend
to think of as measuring forward and reflected power because we
have put a scale on it marked in this way! What it actually
measures is the in-phase (forward) component of current,
and the out-of-phase (reverse) component, into a presumed
50-ohm load.

There is only one power flow in the line, and that is forward
(hopefully). The voltage, current, and phase difference at
any point in the line define that power flow (in either
direction depending on the phase). Amazingly the magnitude
and direction of the power flow are the same everywhere on
the line apart from losses.

So at the line input a fast pulse always sees 50 ohms, whatever
the distant load, but a steady sine wave sees a complex load
calculated in the usual way.

The tube amplifier is usually designed to deliver its rated
power into 50 ohms real. It will probably deliver more into
a lower load (which may damage it), and it will certainly
deliver less into a higher real load. It will also deliver
less into a complex load unless you tune out the imaginary part.
The efficiency of the amplifier depends on the load. If into
a certain (complex) mismatched load its efficiency is 70%,
then 30% of the dc input power is lost as heat, mostly in
the plate of a tube amplifier.

That 30% was never delivered as power down the line in the
first place, so the question of what happens when it comes
back down the line never arises.

Nor does the output impedance of the amplifier matter -
it may be 50 ohms, or it may be much less as with most solid
state amplifiers. The output impedance is merely part of
the amplifier design. What matters is the rated load resistance,
the power delivered into that rated load, and the way the
efficiency varies with other loads.

This is a rather different way of looking at the question,
hence the new thread. Considered comments welcome.

Guy Fletcher VK2BBF guy@macadam.mpce.mq.edu.au

3208. Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 02:57:29 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov3.025729.14375@ke4zv.atl.ga.us>
Source record: 115745

In article <3998nm$c4c@sunb.ocs.mq.edu.au> guy@macadam.mpce.mq.edu.au (Guy Fletcher) writes:
>
>This is a rather different way of looking at the question,
>hence the new thread. Considered comments welcome.

You've said it much better than anyone else. The rest of us have been trying to stretch other models to say the same thing, sometimes without much success. If I may summarize, real power always flows towards the load, any heating in the amplifier is the result of loss of efficiency due to a poor load impedance at the amplifier output terminals. All else is chimera.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3209. Periodic Announcement - ARRL Email Information Server (info@arrl.org)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 04:00:02 UTC
From: mtracy@arrl.org
Message-ID: <rec.radio.info-arrl.email.info_783835201@ve6mgs.ampr.ab.ca>
Source record: 115692
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.info

Periodic Announcement - ARRL Email Information Server (info@arrl.org)

The services that the ARRL provides via the internet include the
Email Information Server and the Technical Information Service.
The Information Server is an automated mail server that gives you
access to many of information files relating to various facets of
Amateur Radio. You can retrieve any or all of these files by
sending an email message to info@arrl.org here at ARRL HQ.
Each file you request is then mailed to you automatically.

To use it, mail messages to:

info@arrl.org

Each line of the message body should contain a command as shown below.
The subject of your message is not processed and may be omitted. You
may place as many commands in a message as you want. The files you
request will be sent to you in separate messages. Only ASCII text
files are supported.

Valid INFO commands:

reply <address> (may be needed - see below for explanation)
help
index
send FILENAME (example: send prospect.txt)
quit

In the above message example, "help" retrieves a brief set of
instructions for info, "index" retrieves a list of available files
and "send prospect.txt" retrieves a text file containing information
on becoming a radio amateur.

Note to users with FTP capability: All of these files are also
available by anonymous ftp to oak.oakland.edu in the
pub/hamradio/arrl/infoserver area. Retrieve the file index.txt
in the /league sub-directory for a complete listing of available
files.

If you want to retrieve several text files with one message, use a
separate line for each "send filename" request.

Your From: field or Reply-to: field in your header should contain a
valid Internet address, including full domain name. If your From:
field does not contain a valid Internet address, the answer will not
reach you. If this is the case, then use the reply command as shown

above. When needed, this command should always be the first command in your message.

IMPORTANT: Please use the quit command in your message. This will prevent processing errors from message signatures.

PLEASE NOTE!: This is an automated system not capable of handling written requests. Any questions on the info-server or the content of any of its files should be directed to mtracy@arrl.org.

ALSO NOTE!: Do *NOT* reply to messages sent from info@arrl.org - the reply address is redirected to keep bounced messages from endlessly looping. Write a new message to info@arrl.org instead.

The Technical Information Service gives League members on the internet better access to the knowledgeable technical staff here at ARRL HQ. Questions relating to Amateur Radio and related technical topics are welcome. To use this service, send a normal e-mail message to tis@arrl.org with your question spelled out in plain english. For best service, be as specific as possible and keep your line length in messages to a maximum of 80 characters. Due to personnel limitations, priority will be given to questions from League members.

Best Regards,

Michael Tracy, KC1SX, ARRL Technical Information Services Coordinator
(e-mail mtracy@arrl.org)

Sample of files available from INFO: (There are lots more!)

Note - If you are not yet an Amateur Radio operator retrieve the file prospect (send prospect) for information on how to easily get started in this fun hobby.

FILENAME SIZE DESCRIPTION
--- --- ---
PROSPECT.TXT 2k How to get your Amateur Radio license
EXAMS.TXT 52k Current exam schedule info - updated bi-weekly
EXAMINFO.TXT 9k Examinations - what to bring - requirements
USERS.TXT 6k List of HQ Email addresses
ARRLCAT.TXT 39k Catalog of ARRL Publications - commercial content
JOIN.TXT 2k How become an ARRL member
SERVICES.TXT 5k A condensed list of ARRL membership services
TOUR.TXT 28k An electronic tour of ARRL Headquarters
DIR.HQ 5k Visiting ARRL HQ - directions and tour information
HFBANDS 7k Breakdown of users of HF spectrum
Q-SIGS 1k ARRL list of Amateur Radio Q-signals
W1AW.SKD 2k W1AW schedule of transmissions and operation
PRODREV1.TXT 12k Which rig is best? Part 1 - QST Lab Notes
PRODREV2.TXT 22k Which rig is best? Part 2 - QST Lab Notes
!LIST.TXT 6k QST Bibliographies List
RFIGEN.TXT 37k How to solve an EMI/RFI problem - QST Lab Notes

RFISOURC.TXT 13k Where to buy filters - EMI-proof telephones etc.
ADDRESS.TXT 16k Lots and lots of ham/electronic company addresses
KITS.TXT 6k List of companies that sell kits
BBS.TXT 12k List of ham-radio land-line bulletin boards
FAQ1.TXT 25k Introduction to the FAQ and Amateur Radio
FAQ2.TXT 45k Amateur Radio Orgs, Services and Info Sources
FAQ3.TXT 32k Amateur Radio Advanced and Technical Questions

American Radio Relay League, Inc. Tel: 1-203-666-1541
225 Main Street Fax: 1-203-665-7531
Newington, CT 06111 Email: mtracy@arrl.org

3210. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 10:28:58 UTC
From: kendelm@rn1.nursing.arizona.edu
Message-ID: <kendelm.9.000A7BEA@rn1.nursing.arizona.edu>
Source record: 115751

In article <1994Nov01.204639.125036@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu (Sean Norris) writes:
>From: snorris@harp.aix.calpoly.edu (Sean Norris)
>Subject: PCB Board from laser print??
>Date: Tue, 01 Nov 1994 20:46:39 GMT

>I'm working on a project that requires me to make a PC board and I want
>it to be as hassle free as possible. I have seen many ads about some
>special paper which you can print with a laser printer, iron it onto the
>PC board, peel it off and then etch. Has anyone used this technique? If
>so, it it reliable? My project is all surface mount and at very high
>frequencies so the traces must be small and sharp.
>If anyone has any experience/tips/brands/etc.

I tested several papers for doing the toner transfer to the copper clad board. What I found is that the higher the clay content, the better the transfer. High clay content papers are used for ink-jet printers, etc. and have a very smooth surface. One side is smoother than the other.

None of the papers I tried gave clean/sharp traces. There will always be some toner that doesn't stick well, lets etchant bleed underneath it, or comes off with the paper. I can do a lot of things with this method, but would use a photo-sensitive process for what you describe.

I haven't heard of any of the films that are available for this purpose working well.

KC7FRS

3211. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 12:43:06 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <476226586wnr@ifwtech.demon.co.uk>
Source record: 115748

In article: <1994Nov01.204639.125036@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu
(Sean
Norris) writes:
>
> I'm working on a project that requires me to make a PC board and I want
> it to be as hassle free as possible. I have seen many ads about some
> special paper which you can print with a laser printer, iron it onto the
> PC board, peel it off and then etch. Has anyone used this technique? If
> so, it it reliable? My project is all surface mount and at very high
> frequencies so the traces must be small and sharp.
> If anyone has any experience/tips/brands/etc. I would appreciate it very
> much if you could E-mail me.
In article: <1994Nov01.204639.125036@zeus.aix.calpoly.edu> snorris@harp.aix.calpoly.edu
(Sean
Norris) writes:
>
> I'm working on a project that requires me to make a PC board and I want
> it to be as hassle free as possible. I have seen many ads about some
> special paper which you can print with a laser printer, iron it onto the
> PC board, peel it off and then etch. Has anyone used this technique? If
> so, it it reliable? My project is all surface mount and at very high
> frequencies so the traces must be small and sharp.
> If anyone has any experience/tips/brands/etc. I would appreciate it very
> much if you could E-mail me.

Please post any good ideas to this newsgroup - we'd all like to know!

One potential problem with laser printers is that they don't
necessarily print with full geometric accuracy. For example, my old
LJII clone is OK across the page but has errors of up to 5% along
the length. This makes it very difficult to get the board mounting holes
on the right centers, and the pins of VLSI ICs can drift out of alignment.
Fortunately I know where the accurate zones are, so it's adequate for
small boards.

Moral: print out a 1"x1" grid and check it all over the page.

--
73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

3212. Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 13:47:54 UTC
From: richer@cambridge.village.com
Message-ID: <39apma$p3h@cambridge.village.com>
Source record: 115672

Hello!

After a hiatus of more years than I care to think about, I have returned to ham radio and construction of ham goodies. Unfortunately, I no longer own a grid-dip meter, and I can't seem to find one of the damned things anywhere. It's makin' it real hard to align converters....

Can anyone tell me where I can purchase one of hese devices, or better yet, can someone point me toward a set of plans for same? I would prefer to build it myself, being the cheap swine that I am.....<grin>...

Al Richer

3213. Re: Q: Al heatsinks and black paint.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 15:17:44 UTC
From: mack@ncifcrf.gov
Message-ID: <Cyp6HK.404@ncifcrf.gov>
Source record: 115767

In article <38qukv$g6k@acorn.acorn.co.uk> agodwin@acorn.co.uk (Adrian Godwin) writes:
>In article <38i384$mr3@charm.magnus.acs.ohio-state.edu>,
>Steve Bertsch <sbertsch@magnus.acs.ohio-state.edu> wrote:
>>I looked up the reference on heat sinks in National Semiconductor's
>>_Voltage Regulator Hankbook_ (c)1982.
>>
>>---------------snip 'n' save--------------------
>>
>
>(I did)
>
>However, heatsinks don't only lose heat by radiation - they also
>conduct it to air, circulated either forcibly or by convection.
>
>I don't know what the relative heat losses by various methods are,
>but I suspect the emissivity doesn't tell the whole story - improving
>emissivity by a factor of 15 probably doesn't reduce the thermal
>resistance by the same order (especially if some of the emitting
>surfaces face each other - black surfaces absorb more radiation, too).
>

Spray it with a thin coating of matte black Krylon - makes a world of
difference.

Joe Mack NA3T
mack@ncifcrf.gov

>-adrian
>
>

3214. Source of chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 16:52:00 UTC
From: Richard Trok <Richard.Trok@f747.n115.z1.fidonet.org>
Message-ID: <783859920@f747.n115.z1.ftn>
Source record: 115749

From:rtrok@radiohobby.chigate.com

IP>I've just exhausted all the opportunities (known to me) for finding the
IP>following Motorola IC:-

IP> MC145436P

This IC is listed in the "NEWARK ELECTRONICS" catalog in Chicago,
Illinois, USA.
The have a branch in London, UK
Phone: (0420) 543333
Fax: (0420) 544450
Price here is $2.90 each
Hope this helps.
Rich NI9S

X SLMR 2.1a X

3215. Re: Where does the power go? Part 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 17:48:42 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <39b7pq$pa7@chnews.intel.com>
Source record: 115669

In article <1994Nov1.173708.10808@arrl.org>,
Jon Bloom (KE3Z) <jbloom@arrl.org> wrote:
>
>In an earlier post you said that with a properly tuned antenna tuner in
>line, a conjugate match would be achieved. (I'm paraphrasing, but I think
>that's accurate.) Presumably, the impedance looking into the antenna tuner
>is 50 ohms. If the output impedance of the transmitter is not 50 ohms, how
>is there a conjugate match? (Hint: there isn't.)

Sorry if I wasn't clear. I never said there was a conjugate match between
the transmitter and the antenna tuner. When I said the antenna tuner achieves
a conjugate match I thought it would be obvious that I was talking about the
antenna side. In fact, I argued that the transmitter output impedance is
considerably lower than 50 ohms and therefore, _not_ a conjugate match so
there _would_ be some re-reflection of reflected power at the transmitter
output.

Let's say the output stage dissipates 20w safely and out of the 100w
generated, sends 80w to the load. If one really did achieve a conjugate
match at the output stage, the load would receive only about 20w
because the foldback circuits would limit the output stage dissipation
to the 20w design limit.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3216. Intermod Help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 18:05:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9411031820442301@kbsbbs.com>
Source record: 115750

LB>I am running a Kenwood th-28a HT with a J-Pole antenna. My problem
LB>is that there is a cellular tower close to my current residence and
LB>my receiver is picking up extreme intermod. I am looking for any
LB>"cheap" or should I say "homebrew" way of filtering out the
LB>intermod... Any help would be appreciated.

Greetings Loren:

Fair Radio Sales in Lima, Ohio 419-223-2196 used to handle a
military surplus dual cavity bandpass filter F-194U that tuned 142-163
MHz. They also had models F-192U and F193U filters that could be
modified to cover the 2 M band. They were priced at less than $30 US
plus shipping. I do not know if they still have these filters available.

73

Very Best Regards,
T.M. Alldread INTERNET: tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3217. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 18:56:17 UTC
From: tomb@lsid.hp.com
Message-ID: <CypGLt.8yG@hpcvsnz.cv.hp.com>
Source record: 115684

Ian G3SEK (G3SEK@ifwtech.demon.co.uk) wrote:

(re: using a laser printer in making homebrew pc boards...)
: Please post any good ideas to this newsgroup - we'd all like to know!

Well, this isn't exactly what the original poster had in mind, but it works well for me. I make single and double sided boards, mostly surface mount now. Most of the parts I use are SOIC outlines with 50 mil lead spacing, 1206 and 0805 resistors and ceramic caps, tantalums, inductors, and things like that. Occasionally I'll do a fine-pitch part, though when doing that, I don't rely on just the laser printer.

My process is photographic. But it's pretty simple; from bare board to etched blank is about 1.5 hours, including coating the board with photoresist and drying it. No darkroom is required, just dim lighting. You can get pre-coated boards, too, to avoid dealing with the photoresist lacquer and save the coating and drying time, about 45 minutes.

I can provide more details on the resist and its application, but will emphasize exposure here:

I print a 1:1 flipped image of the design I want, with black where I want copper on the board: a "positive" image. My photoresist is "positive" type. I print the image on a good quality tracing vellum. It's translucent, and by printing the image flipped, the toner goes against the board and keeps the light diffusion in the paper from messing up the image. The exposure is about 12 minutes under a sunlamp at about 15 inches, in a simple print frame made of a large sheet of 1/4" plate glass and an equal-size piece of foam rubber--it's about 15" square. Just a simple piece of plywood under it all to keep it flat. The weight of the glass against the board and paper, with the foam on the bottom of the board, keeps the paper against the board. After exposure, develop (in a dilute sodium hydroxide solution) for about 2 to 3 minutes--in dim light it's easy to see the development. Rinse, scrub gently with a moist sponge with a bit of cleanser (e.g., "Comet") on it. Float on top of a tray of ferric chloride to etch.

I have no trouble putting 8 mil traces/8 mil spaces on a board this way, so I can do a single trace between SOIC pins. I have done some 5mil/5mil stuff, but I print that 4:1 and have a litho shop make a 1:1 transparency for me for about $10. A 600dpi laser printer might make 5/5 boards possible the "simple way." My strange etch method has a reason: as the etching takes place, convection currents are set up. Gentle though they are, they make the etching a bit faster and leave very clean edges that are more vertical than if I just put the board on the bottom of the tray. You can float a board through the wonder of surface

tension. I was surprised to see how well it worked when I first tried it. -- I got a lot of ferric chloride a long time ago, and though it's not the ideal etchant, I'll use it till it's gone. I'll probably switch to cupric chloride when that happens.

For double-sided boards, I make two transparencies with alignment marks, and tape them along one edge. I then tape the board to one of the transpariencies (which are quite a bit oversize) along two edges and lay the other transparency over the top of the board. That side is the first to be exposed; the board is flipped and exposed to the transparency it's taped to next. You can do better with alignment if you have a strip of material the thickness of the board that you can align the transparencies to, using perhaps pins through precision-punched holes like is done for things like archetectural drawings that span several layers that must be kept in alignment. But using the simple tape-together method, I've used 30 mil pads on vias successfully, and with surface mount, there's never a need for anything but vias. Careful layout keeps those to a minimum.

3218. Re: VCO in Key Components of Mod RCVR Design (QST)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-03 20:08:22 UTC
From: dnewkirk@arrl.org
Message-ID: <1994Nov3.200822.22146@arrl.org>
Source record: 115680

Bill Kirkland (kirkland@bgtys22.bnr.ca) wrote:

: Does anyone have any information on the design of the VCO diagrammed
: in the second part of the series "Key Components of Modern Receiver
: Design"? I am particularly interested in how the 9.2nH coil is tapped and
: any information on the source biasing scheme for the FET oscillator.

One thing's for sure: We relayed that inductor label incorrectly; the
correct value is 92 nH.

How about asking the author? The article's Endnote 10 (on page 31 of June
1994 *QST*) includes the phone (201-881-1200) and fax (201-881-8361) numbers
for Compact Software, of which author Ulrich Rohde is president.

David Newkirk, WJ1Z dnewkirk@arrl.org

3219. Local TV Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 02:48:40 UTC
From: T.Stewart@massey.ac.nz
Message-ID: <TStewart.68.2EB9A108@massey.ac.nz>
Source record: 115670

I've got kids who occasionally get up late and watch TV when we're asleep (and they are suppose to be too!!).

Anyone have any ideas on how to build a jammer (or modify existing equipment) which will interfer with stations on the VHF/UHF band. Only for 50 meters or so of course, so as not to interfer with the neighbours.

Is this simple or is the task quite complex?

Cheers

Terry

****
* Terry Stewart *
* Department of Plant Science *
* Massey University *
* Palmerston North *
* New Zealand *
* *
* T.Stewart@massey.ac.nz *
****

3220. Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 06:12:40 UTC
From: DFNF67A@prodigy.com
Message-ID: <39cjco$1qki@usenetw1.news.prodigy.com>
Source record: 115673

I am building the gel cell charger that is in the 1993 ARRL handbook. I am out of town at the moment and do not know the page number or the name of the project in the handbook. However, it is a small charger that will charge gell cell batteries and can be switched between a full charge and float charge. The project calls for a LM3900 Quad Op Amp. I bought a LM2900 and was told that it work just as well and that the pinouts are the same.

Now that I have the project almost finished I cannot get it to work properly. I get the right test voltage and when i adjust the trimpots the LED idicator will not light to tell me there is a full charge. I checked and rechecked the wiring, solder joints, voltages and the LED.

Will the LM2900 work the same as the LM3900??

What other ideas ??

TNX
<<===-------------===>>
FRANK DAMERON {N5TYD}
DFNF67A@prodigy.com

3221. Video Id'er . need info.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 06:51:58 UTC
From: daustin@solano.community.net
Message-ID: <39clme$31i@odin.community.net>
Source record: 115753

Am looking into getting one of those video id boards. Was wondering
if it can put out black and white . Looks like it just does white.
I wanted to make a id that you can kind of see through. But would
need both b and w. Easy to modify one. The Elktronics is the only
one I know about. Has anyone fooled with this?
TNX
Dave

3222. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 07:42:15 UTC
From: bodafu@ccvax.sinica.edu.tw
Message-ID: <bodafu.681.001D6896@ccvax.sinica.edu.tw>
Source record: 115752

>Sure you could make some lead sulfide by the method you describe... but,
>would it be galena! Would it work as a detector ? ... did you try it ?

Yup, sure does. I must admit, though, that after I went to the trouble of making galena, and gloating about what a good boy I was, I went back to using store-bought diodes---much easier to use, and I am REAL lazy.

David

____D__a__v__i__d_____B__e__r__g__a__r__t_____________________________
bodafu@ccvax.sinica.edu.tw

3223. selecting IF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 09:51:01 UTC
From: mikael.landing@teknikum.uu.se
Message-ID: <mikael.landing.5.00450967@teknikum.uu.se>
Source record: 115527

Does anyone know about a computer program that can calculate and pointout
spurious responses when using a specified IF-freq and RF-freq in heterodyning??

Micke

3224. Re: QRP transmittor circuit question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 11:01:54 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <39d4b2$38n6@info2.rus.uni-stuttgart.de>
Source record: 115683

Mark,

Designs with some Pi output filter/transformaer are perfect for
single band operation. broad band designs require a PROPER
broad band transformer + low pass filters.
Go for inductances wound on (Amidon) iron powder cores.
They are neat, dont interact spuriously and can be tweaked
by bunching or spreading the turns.

Success, Moritz DL5UH

3225. Re: selecting IF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 15:08:32 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <39dipg$q4n@bmerha64.bnr.ca>
Source record: 115754

Mini-Circuits has a program (MiniSpur I believe) for calculating spurious responses from mixing. You might also check the software available through the RF Design magazine (I forget the publishing company).

Bill Kirkland

3226. Re: Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 15:55:50 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.783964550@melpar>
Source record: 115679

richer@cambridge.village.com (Al Richer) writes:

>Hello!

>After a hiatus of more years than I care to think about, I have returned to
>ham radio and construction of ham goodies. Unfortunately, I no longer own
>a grid-dip meter, and I can't seem to find one of the damned things anywhere.
>It's makin' it real hard to align converters....

>Can anyone tell me where I can purchase one of hese devices, or better yet,
>can someone point me toward a set of plans for same? I would prefer to build
>it myself, being the cheap swine that I am.....<grin>...

> Al Richer

And please *post* the info rather than e-mailing to Al; I'd like
the info also, and there are no doubt others as well.

73,

Paul, K4MSG

3227. Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 17:22:40 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <39dql0$idm@chnews.intel.com>
Source record: 115674

In article <1994Nov3.025729.14375@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>In article <3998nm$c4c@sunb.ocs.mq.edu.au> guy@macadam.mpce.mq.edu.au (Guy Fletcher)
writes:
>>
>>This is a rather different way of looking at the question,
>>hence the new thread. Considered comments welcome.
>
>If I may summarize, real power always flows
>towards the load, any heating in the amplifier is the result of
>loss of efficiency due to a poor load impedance at the amplifier
>output terminals. All else is chimera.

Hi Gary, unfortunately I can't find and don't remember Guy Flet's different
way of looking at things article that you quoted.

When I was in college, I ran an ARC-5 transmitter on 40m. It had two 1625
tubes. I turned it on one day and didn't know that my antenna had fallen
in a storm shorting the coax at the feed point. I had no SWR meter.
I listened, heard no signals, and started sending CQ. The parasitic
suppressors started smoking and the plates turned red.

If my 75 ohm coax had been infinitely long, I would not have known any
difference. The transmitter would have seen the normal 75 ohm load and
it did actually see that 75 ohm load for an instant until the reflections
from the short got back to the transmitter. If the impedance looking back
into the transmitter were zero or infinite, the tubes would not have gotten
hot. Therefore, there must be a real resistive component that caused a real
I2R loss within the tubes solely because of the reflections.

It helps to first visualize a perfect half wave dipole, ie purely resistive
with no reflections, and then imagine an irate neighbor driving a nail
through your coax exactly one half wavelength from the transmitter. The
resulting reflections are partially re-reflected and partially absorbed by
a real resistive component and dissipated within the transmitter tubes.
Eventually, all the power not dissipated in the coax will be dissipated
by the only "load" left in the system.

--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3228. Re: Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 17:40:16 UTC
From: wwalker@ic1d.harris.com
Message-ID: <wwalker.17.2EBA71FE@ic1d.harris.com>
Source record: 115755

>Will the LM2900 work the same as the LM3900??

Yes, they are almost exactly the same; the 2900 has a wider temp. range, but electrically they are essentially identical

>What other ideas ??

Sorry, I'm not familiar with the circuit so I can't help there. Good luck!

David WB4DJZ

3229. PC BRDS XY RESIST INK?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 17:54:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9411041820382314@kbsbbs.com>
Source record: 115756

Greetings All:

I have heard that there is a resist ink available for X/Y pen plotters that one can use with an appropriate CAD program to draw a circuit pattern directly onto bare board stock. My understanding is that the resulting board can then be etched directly without any intermediate processing steps.

This sounds like a nice method for making prototype PCBs. I wonder if anyone on this conference has had experience with this technique and can give us an idea of the degree of accuracy and quality of etching. I would like to prototype a card for my 486 ISA buss and wonder if this method would have the resolution for PLCC chips?

I have heard that X/Y plotters are coming available on the surplus market at affordable prices for us as they apparently are being replaced in industry by laser printers. I wonder if anyone here knows any specific market information about the availability, sources and typical costs of desk top used X/Y pen plotters?

73
Tom, VE7TMA

Very Best Regards,
T.M. Alldread INTERNET:tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3230. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 19:33:14 UTC
From: pease@Eng.Sun.COM
Message-ID: <39e29q$2c@engnews2.Eng.Sun.COM>
Source record: 115757

In a previous article, bodafu@ccvax.sinica.edu.tw (David L. Bergart) says:

>Fools gold is iron pyrite, not lead sulfide. You want to use lead sulfide for
>your detector. You can make it by mixing lead filings and sulfur powder. Put
>the mixture in a short length of 1/4 inch copper tube and then torch it till
>the powders melt.
>

Just a note:
A book I was looking at in the library says that iron pyrite was one of the
materials used for detectors. So, everybody's right.

_Roger

- Roger M. Pease - /home on derange
"Everybody has their moment of great opportunity in life.
If you happen to miss the one you care about, then
everything else in life becomes eerily easy." - Douglas Adams

3231. Re: Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 20:18:08 UTC
From: alanb@hpnmarb.sr.hp.com
Message-ID: <CyrF2A.FM@srgenprp.sr.hp.com>
Source record: 115758

FRANK DAMERON (DFNF67A@prodigy.com) wrote:
: ... The project calls for a LM3900 Quad Op Amp. I bought a
: LM2900 and was told that it work just as well and that the pinouts are
: the same.

: Now that I have the project almost finished I cannot get it to work
: properly. ...

: Will the LM2900 work the same as the LM3900??

The LM2900 and LM3900 are listed on the same National data sheet and
have the same pinout and virtually identical specs. The '2900 is
specified from -40 degC to +85 degC and the '3900 from 0 degC to 70 degC.

AL N1AL

3232. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 22:08:24 UTC
From: edbu@sepia.wv.tek.com
Message-ID: <39ebcoINN53f@sepia.wv.tek.com>
Source record: 115759

In article <CynLH5.C74@sunsrvr6.cci.com> jdc@cci.com (James D. Cronin) writes:
> (stuff deleted)
>I've done toner transfer with regular paper and there are problems with
>the toner not sticking. There is paper with a water soluble coating that
>is said to work well.
>
>Anybody know what the paper is coated with?
>
>73...Jim N2VNO
>
>>Thanks,
>>Sean
>>
>
>

I have found that paper made for thermal wax transfer works well.
It has a clay coating which loosens up when placed in warm water.
I am soaking yet another batch for a Kenwood computer interface ala
QST Feb. '93 as we speak (read). The particular paper I use is for
the Tektronix Phaser 200/220 series printers, since I work for them as
a Media Engineer. I suspect that there are quite a few papers which
have a clay coating on the surface available at local paper supply
stores. Many of these will be for thermal wax transfer, or ink jet type.

As an alternative, I have heard of people having good success by coating
the paper with a diluted solution of elmers glue and allowing it to dry
before printing on it. I have not tried this, and don't really plan to
perform potentially terminal experiments on my laser printer. Good luck.

Ed Burress
KC7GFX

3233. Sherwood (Drake mods) still available?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-04 23:42:04 UTC
From: mbutts@netcom.com
Message-ID: <mbuttsCyrol4.1o0@netcom.com>
Source record: 115760

I'd like to upgrade my Drake C-line with some of the
"Sherwood mods", like the audio amp and mixers.
Is Sherwood still in business? If so, please drop
me a line or post with the address and/or phone.

Thanks and 73!

--KC7IT

--
Mike Butts, Portland, Oregon mbutts@netcom.com

3234. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 01:10:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov5.011008.25594@ke4zv.atl.ga.us>
Source record: 115761

In article <1994Nov2.150552.5065@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>
>: Class AB1 amplifiers routinely achieve 65% efficiency from DC input
>: to RF output in VHF TV broadcast service. Tubes certainly aren't
>: 100% efficient, but that's not because of some output impedance
>: resistor. It's because of contact resistance, back bombardment,
>: and plain old I^2R losses in the tube structure. Every attempt
>: is made to minimize these losses. Tube contact surfaces are silver
>: plated, and made large, tube structure lengths are minimized, and
>: suppressor grids are used in some cases. Flowing 12 amps at 8 kV
>: can cause a tube, and cavity, to heat, but not 48 kWs worth.
>
>8000V/12 amps*.35=233 ohms
>
>Can you further break down these losses--how much is
>due to to each factor? I have to admit that I'm surprised
>that contact losses would be worth mentioning, particularly
>since they involve large, silver plated surfaces. I use
>cheap molex connectors with little tin plated contacts, and
>they aren't significant in a circuit with involving 2 amps
>at 12 volts (12V/2amps=6 ohms).

Well, obviously, the largest loss component is the kinetic energy
of the electron beam striking the plate. For the tube above, you
have about 0.0024 gm of electrons hitting the plate at an appreciable
fraction of the speed of light every second (haven't worked out exactly
what the transit time is for that tube, but since it's for VHF service,
it's certainly short). That kinetic energy (.5mv^2) has to be dissipated
as heat. That's why the tube has anode cooling fins. But the contact
resistance contributes enough that fingerstock sometimes unsolders itself,
and circulating currents can heat the cavities significantly. I've had
tuning plunger fingerstock unsolder itself too. The app notes from the
various manufacturers have detailed data on the various thermal loads
presented by their particular devices/sockets/cavities. I know that
with the 5 hp blowers we use, stack temperature runs about 220-240 F
three feet above the tube. I also know I can get that stack temperature
with no drive by increasing the static bias current. Most of the heating
is not RF heating. The filaments draw 300 amps at 5 volts which is 1500
watts, and that's only a small fraction of the heat load of the system.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary

534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3235. Re: Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 01:18:20 UTC
From: tblairm@tu216.tus.ssi1.com
Message-ID: <39emgs$3lc@sunrise.gv.ssi1.com>
Source record: 115762

In article <39apma$p3h@cambridge.village.com>,
Al Richer <richer@cambridge.village.com> wrote:
>Can anyone tell me where I can purchase one of hese devices, or better yet,
>can someone point me toward a set of plans for same? I would prefer to build
>it myself, being the cheap swine that I am.....<grin>...

I think the ARRL Handbook for Radio Amateurs has plans for one, or at
least it did back in 1987 when mine was printed. Check out teh nearest
ham radio dealer. I've seen that book in generic electronics stores,
too. Make sure that the current issue still has grid dip meter plans
before you buy it, though.

Also, find out if you have any ham swap meets near you; they're often
good places to get good deals on old equipment. Like the Racal-Dana
9008 deviation meter that I got for $100, which a certain large
surplus dealer in Texas still sells for $995.... (The repair manuals
cost me $85 from Racal-Dana, though).

--
Mark J. Blair KE6MYK
Design Engineer
Silicon Systems, Inc.
mark.blair@tus.ssi1.com (714) 573-6709

3236. RF Switching without relays ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 03:28:00 UTC
From: drobert@vax2.concordia.ca
Message-ID: <4NOV199422283505@vax2.concordia.ca>
Source record: 115677

I'm looking for schematic(s) of general purpose RF TX/RX switching
circuits using diodes. I'd like the switching to be powered by the RF signal
feeding it. I've seen some bits and pieces of this principle but never a
complete 'generic' schematic that one could use to add to a setup or modify
equipment.

thanks for any suggestions.

Drobert@vax2.Concordia.ca
Drobert@Conu2

3237. Crystal Radio Coil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 05:05:44 UTC
From: bowling@cebaf4.cebaf.gov
Message-ID: <Cys3HK.KA7@murdoch.acc.Virginia.EDU>
Source record: 115763

I am making a crystal radio with the kids. I plan on using a 2 inch diameter PVC pipe for the tuning coil. How many turns do I need - or what inductance do I need to tune the standard broadcast band with a 355pf variable cap? Should i use coil taps, and where?

Thanks - Bruce

3238. Help needed for mini VHF or UHF beacon transmitter!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 05:53:01 UTC
From: jdc2@acpub.duke.edu
Message-ID: <39f6jt$kg0@news.duke.edu>
Source record: 115691
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,triangle.radio

Fellow Hams,
I have several hobbies, and I'm really trying to bring some of them together. Here's the general concept: I'm going to build a very small and light beacon transmitter on the 440 (or 144) band, and then launch it in a rocket in the Appalachain mountains. Here's what I have done:

1. Mountains: yep, they were still there last time I checked. :)

2. Rocket: Done. Really neat, too. Lots of fun to test!

3. Input signal that will go to the transmitter: Done. I have a voice chip being triggered by an oscillator ckt, and the product is a system that "says" my call sign every few seconds.

Here's where I need help: I need plans/schematics for a cheap, light, and small transmitter circuit. If anyone has any leads on where to find one, or if anyone could mail me a schematic I would GREATLY appreciate it. This is my first ham-homebrew project, so I don't have that many references to draw from. Thanks in advance for any help!

-Josh Carter N5SKQ
jcarter@cs.duke.edu

Also, if you want to check out pictures and details of the rockets built and tested so far, mosiac over to "http://www.ee.duke.edu/~jcarter" and go to the "Nob Croo" page. :)

_/_/_/ "So one night I was lying in bed staring up at the stars ___
_/_/ and I wondered..... Where the HELL is my ceiling?!?" __

J. D. Carter - jcarter@cs.duke.edu

3239. FM Crystal Set

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 07:12:00 UTC
From: hua.chu@channel1.com
Message-ID: <40.2815.2425@channel1.com>
Source record: 115764

MA>Message-ID: <9410027838.AA783802842@mails.imed.com>
MA>Newsgroups: rec.radio.amateur.homebrew
MA>Organization: ucsd usenet gateway

MA>Ian Mitchell asked how the crystal set works in digest #323.

Could you please tell me how I can get this digest? To what address do I
subscribe? Thanks for helping out a novice.

-H.C.

---
* OLX 2.1 * Every time I lose weight, it finds me again!

3240. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 07:12:13 UTC
From: little@iamu.chi.dec.com
Message-ID: <39fb8d$lak@nntpd.lkg.dec.com>
Source record: 115765

How do you find the sensitivity of your radio? I built one and find that it isn't very sensitive and can't get it to tune anything other than the loudest local station. I'm guessing that both problems may be attributable to using a low impedance earphone (all I had handy). My assumption is that the low impedance earphone lowers the Q so much of the circuit that it is so broadbanded as to receive just about anything.

Does anyone know of a good source for inexpensive high impedance earphones? I need about 20 of them for the radio club at the local elementary school. I'm going to have them build one of these radios as a first project.

73,
Todd
N9MWB

3241. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 11:34:52 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <733251732wnr@ifwtech.demon.co.uk>
Source record: 115681

Thanks Tom - that's really excellent info!
--
73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

3242. Re: Communications Quarterly

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 12:36:32 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <CysoCw.GGI@cix.compulink.co.uk>
Source record: 115675

Do you have their FAX number or better still, their E-mail address?

oddjob@cix.compulink.co.uk

3243. Re: Local TV Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 13:37:32 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <39g1qs$b4k@info2.rus.uni-stuttgart.de>
Source record: 115766

>Anyone have any ideas on how to build a jammer (or modify existing equipment)

Wrong Newsgroup, try rec.radio.pirate

3244. Re: Crystal Radio Coil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 16:59:14 UTC
From: burt@teleport.com
Message-ID: <39gdl2$i4u@elaine.teleport.com>
Source record: 115685

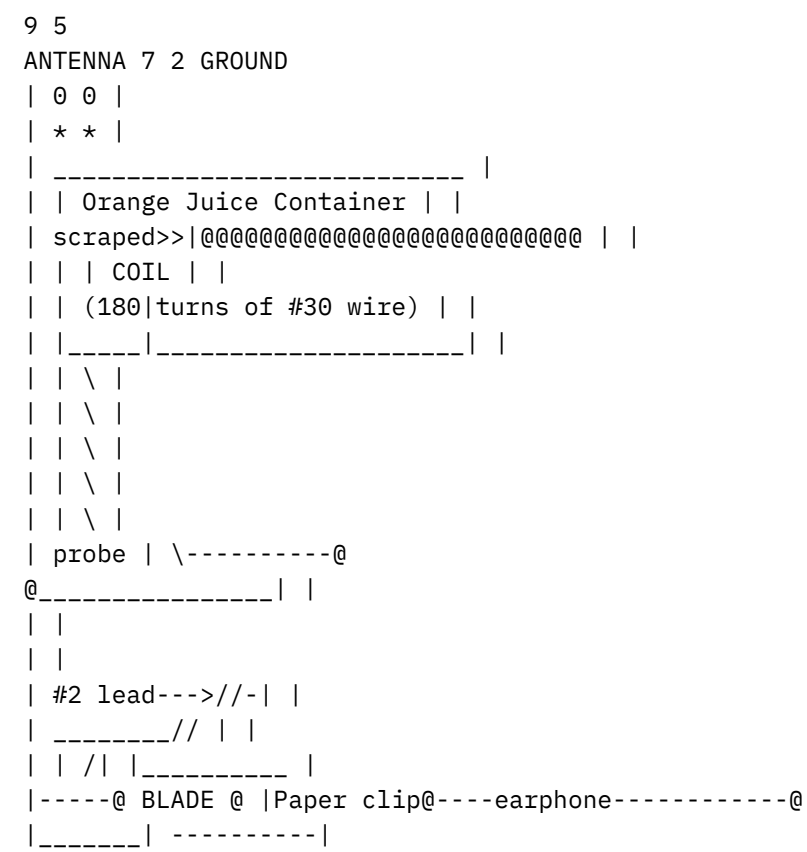
In article <Cys3HK.KA7@murdoch.acc.Virginia.EDU>,
Bruce Bowling <bowling@cebaf4.cebaf.gov> wrote:
>
>I am making a crystal radio with the kids. I plan on using a 2 inch diameter
>PVC pipe for the tuning coil. How many turns do I need - or what inductance
>do I need to tune the standard broadcast band with a 355pf variable cap?
>Should i use coil taps, and where?
>
>Thanks - Bruce

I used a 2.5 in orange juice container, wrapped it with 180 turns of 30PE
radio wire. Only the left-hand side picks up anything.

In an earlier effort, i used 120 turns and a toilet paper tube. It
worked just as well.

I'm sure the PVC pipe will do a good job also.

Here's the diagram again: (I have revised it to match my radio, but the
old specs will work also)



The paper clip provides a spring-loaded holder for the
pencil lead. Sand the part of the paper clip where the
lead is attached. This provides some holding ability for the
holder. Lay the lead against the clip and secure the two
parts by wraping them with fine wire, or thread.
You can also use "invisible" tape. Make sure you have a good
firm anchorage for the lead.

The lead should have a good point where it makes contact with
the razorblade. The paper clip does *not* make contact with the
blade.

I have determined that any piece of carbon steel will serve as
a collector. Ordinary ferrous materials will not. The
literature says that regular razor blades work better than blue
blades.

Use a braided wire probe. For some reason, it picks up much
better than a single point.

Scrape the insulation on the coil to reveal a shiny band of bare
copper (@@@@@) running the length of the coil.
Touch the probe to various spots on the band. Keep your hand
steady!

So far, I've been able to pick up 970KH (strong), and 1520 KH
(weak). Who knows what treasures lie ahead. :)
--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3245. Re: RF Switching without relays ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 17:26:19 UTC
From: nick@vlsi.polymtl.ca
Message-ID: <39gf7r$7ti@charles.cdec.polymtl.ca>
Source record: 115686

In article <4NOV199422283505@vax2.concordia.ca> drobert@vax2.concordia.ca (Denis Robert, ve2ilf) writes:
> I'm looking for schematic(s) of general purpose RF TX/RX switching
>circuits using diodes. I'd like the switching to be powered by the RF signal
>feeding it. I've seen some bits and pieces of this principle but never a
>complete 'generic' schematic that one could use to add to a setup or modify
>equipment.

You have to be more specific. How much power? What frequency? How much isolation?

The circuit will not be "powered" by the RF signal. If you could show me how to do that, it would make PIN diode switches alot easier to design. Basically, what you're talking about it a PIN diode switch. The PIN diodes are arranged in (usually) in a series/shunt configuration between the source (the transmitter) and the load (the antenna) and controlled by a DC voltage that turns the diodes on or off.

When you provide more info, I'll post a PIN diode RF switch.

Nick

--
****
* Nick Ciarallo *
* SR Telecom Inc. telephone: 514-335-2429 ex: 438 *
* Microwave Group facsimile: 514-334-7783 *
* 8150 Trans Canada Hwy internet : nick@vlsi.polymtl.ca *
* St. Laurent, Quebec hamradio : ve2hot@ve2fkb.pq.can.na *
* Canada H4S-1M5 *
****
* Accept no substitutes, *REAL* ham radio lives on 220 MHz! *
****

3246. Need Info.Memory Batt Backup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 17:29:35 UTC
From: teixeira@ccnet.com
Message-ID: <39gfdv$67b@ccnet.ccnet.com>
Source record: 115676

I have a ICOM IC25-A that I use mainly in the shack on a power supply. When I turn off the power supply, the memories go away. Does anyone have any Ideas on adding a battery backup just to support the memories? I was thinking of adding a nicad.

Tnx-Don Teixeira N6FNL
Fremont,CA

3247. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 20:16:44 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <Cyt9nw.84w@news.Hawaii.Edu>
Source record: 115687

I sure hope someone is collecting all these articles and will find
an archive site for them. This topic is quite interesting, and reading
it is like taking a step back in time. It's almost as if we're seeing
radio receivers invented all over again.

Now we need some ideas concerning basic transmitters.

Jeff NH6IL

3248. Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-05 23:27:15 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <39h4cj$8kp@chnews.intel.com>
Source record: 115688

It just dawned on me that this discussion has boiled down to whether reflected power acts like a wave or like a particle. A lot of us have seen ocean waves reflected from the beach, flowing back out to sea, even when there are tremendous incoming waves. The little waves going out seem to disappear into the big waves and emerge on the other side seemingly ignoring the energy of the incoming wave. The water molecules are moving mainly up and down toward the shore but the outgoing waves maintain their identity except for losses. There is energy*time=power in the outgoing wave. Throw a rock in a river and one can see waves (not particles) moving upstream.

So it is with reflected power. The individual electrons are moved toward the antenna by the generator but the reflected power wave keeps its identity going in the opposite direction except for losses. There is energy*time=power in the reflected wave. I suspect that the effect of hitting a stream of water from a fire hose with a baseball bat can be measured at the nozzle not because any actual water molecules travel against the stream but because the shock _wave_ will have an effect throughout the system.

Visualize a transmitter connected to a dead short through 1,000,000 miles of lossless transmission line. Key down for 15 seconds. SWR is 1/1 and the transmitter is happy. Key up. Within seconds, the 100% reflected wave hits the transmitter output. What happens? If the impedance looking back into the transmitter is zero or infinite, all the power will be reflected back down the transmission line and bounce back and forth forever. If the impedance looking back into the transmitter is the characteristic impedance of the transmission line, the transmitter final will heat up and dissipate all the RF energy. In reality, some energy is dissipated in the ordinary (cheap) solid-state transmitter final and some is re-reflected. Some expensive test equipment has 50 ohms looking back into the generator because it was designed that way.

--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3249. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 02:06:35 UTC
From: mzenier@netcom.com
Message-ID: <mzenierCytpuz.HL6@netcom.com>
Source record: 115689

Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
: I'm working on a project that requires me to make a PC board and I want
: it to be as hassle free as possible. I have seen many ads about some
: special paper which you can print with a laser printer, iron it onto the
: PC board, peel it off and then etch. Has anyone used this technique? If
: so, it it reliable? My project is all surface mount and at very high
: frequencies so the traces must be small and sharp.

This was the subject of a posting in sci.electronics last week.
The subject was "Re: Press n Peel". This same information is
on the World Wide Web at http://alpha.med.pitt.edu:9000 under
the "... Sci.electronics Faq..." item, under the Questions and
Answers, in "Where can I get supplies for home PCB manufacture"

Thanks to Filip G.

Mark Zenier mzenier@netcom.com mzenier@eskimo.com

3250. Re: Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 02:48:05 UTC
From: DFNF67A@prodigy.com
Message-ID: <39hg55$kgm@usenetw1.news.prodigy.com>
Source record: 115690

Thanks for the info on the LM2900 - I guess I'll go back and check and re-check the wiring. I'll also throw in another chip and see if it works any better.

TNX
<<===-------------===>>
FRANK DAMERON {N5TYD}
DFNF67A@prodigy.com

3251. Collins, 51J-4

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 03:07:51 UTC
From: gwb@ucssun1.sdsu.edu
Message-ID: <39hha7$sav@pandora.sdsu.edu>
Source record: 115682

Gentlemen:

Please excuse this post if you are a purest Homebrew type, however, I need an answer from those who would know (not your typical Radio Shack "ham").

I need some suggestions on a Collins 51J-4 that is suffering from a dragging gear train. The receiver operates and is in excellent condition, but the gear transmission for the band changing portion is in need of some TLC. If you got some constructive ideas, now is the time...

73, Greg

K6QPV

3252. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 03:35:50 UTC
From: browere@einstein
Message-ID: <39hium$fo6@nic-nac.CSU.net>
Source record: 115668

Jeffrey Herman (jeffrey@kahuna.tmc.edu) wrote:
: I sure hope someone is collecting all these articles and will find
: an archive site for them. This topic is quite interesting, and reading
: it is like taking a step back in time. It's almost as if we're seeing
: radio receivers invented all over again.

: Now we need some ideas concerning basic transmitters.

I have misplaced some of the earliest articles. If someone has indeed
been collecting, please let me know!!
As for basic transmitters, I am eagerly awaiting posts from fellows
more knowledgeable than myself!! :)

3253. Re: Hi-Z earphones

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 04:02:18 UTC
From: gull@grex.cyberspace.ORG
Message-ID: <Pine.3.07.9411052315.A20886-a100000@grex.cyberspace.org>
Source record: 115678

>Does anyone know of a good source for inexpensive high impedance earphones?
>I need about 20 of them for the radio club at the local elementary school.
>I'm going to have them build one of these radios as a first project.

A crystal earphone will work quite well, if you can find one.


```
_ _
__ _ _ _| | | | David Brodbeck Alma, MI
/ _` | | | | | | | Amateur Packet(AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
| (_| | |_| | | | +-------------------------------------------------
\__, |\__,_|_|_|_| @ grex.cyberspace.org
|___/
```

3254. SW converter help?

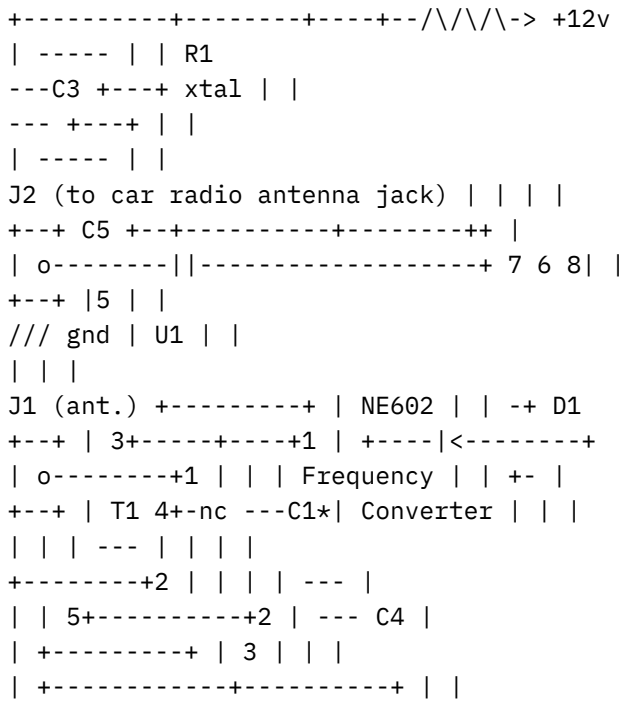
Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 04:17:37 UTC
From: gull@grex.cyberspace.ORG
Message-ID: <Pine.3.07.9411052337.A23707-c100000@grex.cyberspace.org>
Source record: 115693

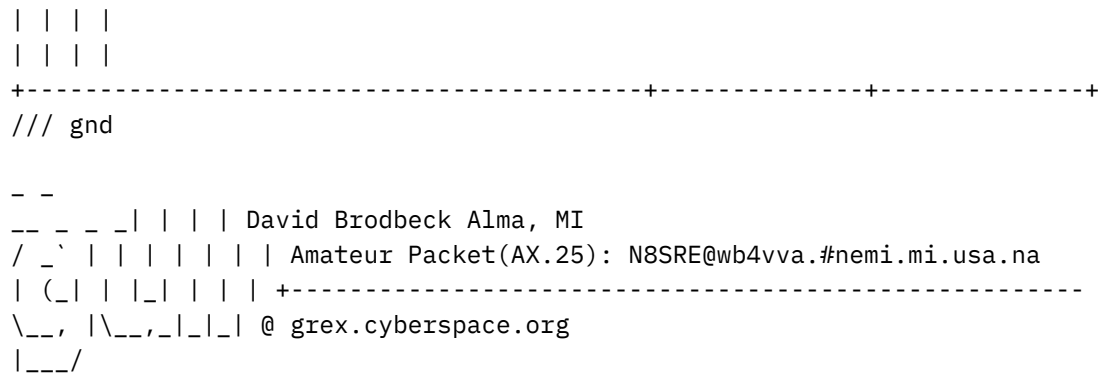
This post is going to be rather long, but I'll try to keep it as short as possible. I'm trying to build a SW converter (SW -> AM broadcast band) from information I found on a local BBS. I'm told this circuit originally came from the October 1989 Popular Electronics magazine. Unfortunately, on the schematic I have C2 (33 pF) is missing. If anyone can tell me where C2 is supposed to go I'd appreciate it, as I'd really like to get the sucker to work. Here's the schematic and parts list:

C1 Optional capacitor. Try 150pF with 5 Mhz crystal, or 47pF with 8 Mhz
If using crystal >= 10 Mhz omit this capacitor.
Omit this capacitor if reception is stronger without it.

C2 33 pF
C3,C5 220 pF
C4 .047 uF
D1 Zener diode, either 5.1v or 6.2v (2N4691 or equivalent)
R1 1K, 1/4 watt resistor
U1 NE602AN Frequency Converter IC
T1 10.7 Mhz miniature IF transformer (green plastic screw)
XTAL 5 Mhz or 8 Mhz crystal, or other values (see text file XTAL.TXT)
One for each band you like to listen to

Schematic
=========





_ _
__ _ _ _| | | | David Brodbeck Alma, MI
/ _` | | | | | | | Amateur Packet(AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
| (_| | |_| | | | +----------
__, |__,_|_|_|_| @ grex.cyberspace.org
|___/

3255. Source of chip?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 11:30:52 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Nov6.113052.11367@grian.cps.altadena.ca.us>
Source record: 115694

From:rtrok@radiohobby.chigate.com

>I've just exhausted all the opportunities (known to me) for finding the
>following Motorola IC:-

> MC145436P

What is it out of? Some Motorola parts are available only from
Motorola Communications - for example their radio squelch chip.

Other catalogs you might want to get:

Digi-Key
1-800-DIGI-KEY
I got catalog #946, Nov/Dec 1994 in the mail yesterday.

Mouser 800-346-6873

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3256. Battery Backup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 13:21:10 UTC
From: kf5mg@metronet.com
Message-ID: <CyuL3B.IIo@metronet.com>
Source record: 115695

I'd like to put together a battery backup system that will run my packet setup. I've got 4 radios, 4 tncs, and 2 pcs. I'm thinking of using 5 - 10 auto or boat batteries and keeping them float charged with a 50 amp power supply. Does anyone know where I can find a book or QST article that might help me figure out what I need to do to get started? Thanks.

73's de Jack - kf5mg
Internet - kf5mg@kf5mg.ampr.org - 44.28.0.14
- kf5mg@metronet.com - work (looking for)
AX25net - kf5mg@kf5mg.#dfw.tx.usa.noam - home (817) 488-4386
+===+
+ D.A.M. - Mothers Against Dyslexia +
+===+

3257. Building frequency counter with minimum # components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 16:47:31 UTC
From: mike@io.org
Message-ID: <39j1b3$n2l@ionews.io.org>
Source record: 115696

I want to build a frequency counter to cover from d.c. (or ~ 100-200 khz) to an upper limit of at least 30 mHz, (and possibly higher 500 mHz, 1 gHz, depending on parts cost/availability, complexity), using the minimum # of components.

Can anyone suggest IC #'s ?

I have seen the circuit in the ARRL Handbook which uses a 74c926. This article was apparently written in 1989. What newer IC's are available?

What kind of components are being used for freq counters in commercial receivers?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

3258. Filter programs.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 17:29:48 UTC
From: novatech@eskimo.com
Message-ID: <CyuwLt.4FB@eskimo.com>
Source record: 115717

I often see requests for filter design programs on this newsgroup.
Over the past few years I have slapped together a few programs
to calculate the values of L-C filters for Butterworth, Chebychev
and Elliptical responses. The elliptical program is just a translation
of a basic program I received a while back.

I am not a programmer, so the programs aren't clean, but I have
checked them against many examples and I have built examples of
filters from each program. My big plan is to combine them into
one-- if anyone does this, I'd like a copy.

The three posting to follow are:

Butterworth: butter.c
Chebychev: cheb.c
Elliptical: elip.c (includes elip.bas)

Comments and improvements welcomed. Have fun.

--

Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303

3259. Butterworth: butter.c

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 17:31:26 UTC
From: novatech@eskimo.com
Message-ID: <Cyuwor.4KI@eskimo.com>
Source record: 115697

```
/***********************************************

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program is neither sold nor used for commercial
purposes and that this notice stay with all
copies.

history:

rev 0: november 02, 1987 Steven D. Swift, P.E.
Seattle, Washington

rev 1: august 31, 1990 updated array initialization
modified number of digits in out

***********************************************
butter.c

this program calculates the component values for
nth order butterworth filters. Either low pass
or high pass, with either capacitive or inductive
inputs. The input and output load are restricted
to being the same value and resistive, e.g; 50 ohms.
No other restrictions are placed on the values and
the program does not check for standard values.
Although the output is in a form most appropriate for
filters that end up with L's in uH and C's in pF.

The formulas used in this program and the examples
used to test it came from:

Introduction to Radio Frequency Design,
W.H. Hayward, Prentice-Hall 1982.

Required inputs are:

Fc: 3db frequency, in MHz
Ro: source and load impedance, in ohms
n: order of desired filter
hp or lp: type of filter
cap or ind: input stage, capacitive or inductive

The outputs are:

component value, inductor or capacitor indicated by
units printed.
```

```
------------------------------------------------------------

************************************************************/

#include <stdio.h>
#include <math.h>

float L[25] ; /* inductors */
float C[25] ; /* capacitors */
float g[25]; /* coeficient register */

main()
{

float pi = 3.141592654;
double sin(); /* need sine to calculate coef */
int k = 0; /* counter for coeficients */
float Fc ; /* 3dB cutoff frequency hertz */
float Wc ; /* 3dB cutoff frequency radians */
float Ro = 50.0; /* source and load impedance */
int input; /* alpha for inductive input */
/* alpha for capacitive input */
int n = 3; /* order of filter */
int i = 0; /* dummy counter */
int type; /* type of filter: lp or hp */
float meg = 1000000.0;

/* input user chosen variables first */

printf("\n\nBUTTERWORTH FILTER PROGRAM\n\n");

printf("Input the order of the filter (25 max): ");
scanf("%d", &n);
printf("\n");

if(n>25){
printf("\nOrder too large!\n");
exit();
}

init(n); /* initialize arrays to all zeroes */

printf("Input the type of filter (1=hp or 2=lp): ");
scanf("%d", &type);
printf("\n");

printf("Type of input stage (1=ind or 2=cap): ");
scanf("%d", &input);
printf("\n");

printf("Input cutoff frequency (MHz): ");
scanf("%f",&Fc);
Wc = 2*pi*Fc*meg;
printf("\n");
```

```
printf("Input source and load resistance (ohms): ");
scanf("%f",&Ro);
printf("\n");

/*
calculate normalized filter coeficients and store them in
the array g[]
*/

for(i = 1; i <= n; i++)
g[i] = 2*sin( (2*i-1)*pi/(2*n) );

/*
test for types of filters and input stage, then perform
the appropriate calculations by calling the appropriate
function. these functions do not return values, but
modify the arrays L[] and C[] directly, getting inputs
from the variables typed in by the user and from g[].
*/

if ( (type==1) && (input==1) )
for( i = 1; i <= n ; i++)
hpind(Wc,g[i],Ro,i);

else if ( (type==2) && (input==2) )
for( i = 1; i <= n ; i++)
lpcap(Wc,g[i],Ro,i);

else if ( (type==1) && (input==2) )
for( i = 1; i <= n ; i++)
hpcap(Wc,g[i],Ro,i);

else if ( (type==2) && (input==1) )
for( i = 1; i <= n ; i++)
lpind(Wc,g[i],Ro,i);

else printf("Type of filter incorrect. Please try again.\n\n");

output(n,Fc); /* output results */
}

/* all the functions used by main are located starting here */

hpcap(x,y,z,k) /* x is radian freq, y is gk, z is Ro and k is count */

float x,y,z;
int k;
{
if(isodd(k)==1)
C[k] = 1.0/(x*y*z);
else
L[k] = z/(x*y);
}

hpind(x,y,z,k) /* x is radian freq, y is gk, z is Ro and k is count */
```

```
float x,y,z;
int k;
{
if(isodd(k)==0)
C[k] = 1.0/(x*y*z);
else
L[k] = z/(x*y);

}

lpcap(x,y,z,k) /* x is radian freq, y is gk, z is Ro and k is count */

float x,y,z;
int k;
{
if(isodd(k)==1)
C[k] = y/(z*x);
else
L[k] = (y*z)/x;
}

lpind(x,y,z,k) /* x is radian freq, y is gk, z is Ro and k is count */

float x,y,z;
int k;
{
if(isodd(k)==0)
C[k] = y/(z*x);
else
L[k] = (z*y)/x;
}

/* isodd tests if an integer is odd or not, for use in finding
whether or not to calculate an L or a C element */

isodd(x)

int x;
{
int i=1;
if ( (x % 2) == 0)
i=0; /* returns 0 if even, 1 if odd */
return(i);
}

/* output(): prints out the results of the program */

output(n,f)

float f;
int n;
{
int i;
printf("\nValues for %d order Butterworth filter @ %.4e MHz",n,f);
printf("\n Element Inductors Capacitors\n\n");
```

```
for (i=1; i<=n; i++)
{
if (L[i]>0)
printf(" #: %d %.3fuH\n",i,L[i]*1.0e6);
if (C[i]>0)
printf(" #: %d %.2fpF\n",i,C[i]*1.0e12);
}
}

/* initialize array variables */

init(n)
int n;
{
int i;
for (i=0; i<=n; i++)
{
g[i] = 0.0;
L[i] = 0.0;
C[i] = 0.0;
}
}
/* that's the end */

--
```

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3260. Chebychev: cheb.c

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 17:32:52 UTC
From: novatech@eskimo.com
Message-ID: <Cyuwqz.4Mo@eskimo.com>
Source record: 115698

```
/* cheb.c

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program is neither sold nor used for commercial
purposes and that this notice stay with all
copies.

history:

rev 0: December 19, 1991 Steven D. Swift, P.E.
Seattle, Washington
rev 1: Feb 22, 1993
Fixed bug in unequal term section (output) that
caused bad L values for k=m

rev 2: March 15, 1993
Found more bugs: a: center capacitor for N=5 missing
Adjusted so normalized values are correct for
unequal loads.
Adjust for correct unequal load values
(note: this uses Bartlett's Bisection theorem and
appears to be bogus)
Added test for odd Order.

rev 3: March 23, 1993
added minimum order calculation routine

************************************************
cheb.c

this program calculates the component values for
nth odd order chebychev low pass filters.
No restrictions are placed on the values and
the program does not check for standard values.
Although the output is in a form most appropriate for
filters that end up with L's in uH and C's in pF.

The formulas used in this program and the examples
used to test it came from:

Electronic Filter Design Handbook, 2nd ed
Williams and Taylor, p 241ff.

Required inputs are:

Fc: 3db frequency, in MHz
Rs: source impedance, in ohms
```

```
Rl: load impedance, in ohms
n: order of desired filter, must be odd

If cutoff frequency and stopband edge are known then the program
will find the minimum odd order required.

The outputs are:

component value, inductor or capacitor indicated by
units printed. (and order if program calculates it)

------------------------------------------------------------
************************************************************/

#include <stdio.h>
#include <math.h>

double A[25]; /* dummy coef register */
double B[25]; /* dummy coef register */
double G[25]; /* dummy coef register */
int M; /* minimum order required, always odd */

main()
{
double pi = 3.141592654;
double sin(); /* need sine to calculate coef */
double pow();
int k = 0; /* counter for coeficients */
double Fc ; /* 3dB cutoff frequency hertz */
double Wc ; /* 3dB cutoff frequency radians */
double Fs ; /* 3dB stopband frequency hertz */
double Ws ; /* 3dB stopband frequency radians */
double Rs = 50.0; /* source and load impedance */
double Rl = 50.0; /* source and load impedance */
double Ripple ; /* ripple allowed in passband, in dB */
int n = 3; /* order of filter */
double meg = 1.0e6;
double cosh(); /* hyperbolic functions needed */
double tanh();
double sinh();
double sqrt();
double ceil(); /*ceiling function */
double beta;
double Y,At;
double log();
double Acosh();
double Asinh();
double A1;
int isodd();
int order();
double epsilon;

/* input user chosen variables first */
```

```
printf("\nCHEBYCHEV ODD ORDER LPF PROGRAM\n");
printf("This version assumes capacitive input and output\n");

printf("Input allowed passband ripple in dB: ");
scanf("%lf",&Ripple);

printf("Input cutoff frequency (MHz): ");
scanf("%lf",&Fc);
Wc = 2.0*pi*Fc*meg;
Fc = Fc*meg;

printf("\nInput the order of the filter (25 max)\n");
printf("Input a 1 if you want program to find order: ");
scanf("%d", &n);

if( n != 1) {
if( isodd(n) == 0 ){
printf("\nOrder not odd!\n");
exit();
}
if(n>25){
printf("\nOrder too large!\n");
exit();
}
}

if( n == 1 ) {
printf("\nInput stopband edge frequency (MHz): ");
scanf("%lf",&Fs);
Ws = 2.0*pi*Fs*meg;

printf("\nInput stopband edge attenuation (dB): ");
scanf("%lf",&At);

n = order(Wc,Ws,At,Ripple);

}
printf("Odd order of %d chosen\n", n);

init(n); /* initialize arrays to all zeroes */

printf("Input source resistance (ohms): ");
scanf("%lf",&Rs);

printf("Input load resistance (ohms): ");
scanf("%lf",&Rl);
/*
calculate various factors needed in later equations
*/
epsilon = sqrt( ( pow(10.0, Ripple/10.0) -1.0 )) ;
beta = log( 1.0/(tanh(Ripple/17.37)));
Y = sinh(beta/(2.0*n));
A1 = Asinh(1.0/epsilon)/n;
```

```
/*
calculate normalized filter coeficients and store them in
the array g[]
*/
A[1] = sin ( (pi/(2.0*n))); /* find A1 */
B[1] = Y*Y + sin(pi/n)*(sin(pi/n));

for(k = 2; k <= n; k++)
{
A[k] = sin((2.0*k-1.0)*pi/(2.0*n));
B[k] = Y*Y + sin(k*pi/n)*(sin(k*pi/n));
}

G[1] = (2.0*A[1]*cosh(A1))/Y;

for(k = 2; k <= n; k++)
{
G[k] = (4.0*A[k-1]*A[k]*cosh(A1)*cosh(A1))/(B[k-1]*G[k-1]);
}

output(n,Fc,Rs,Rl);

}

/* initialize array variables */

init(n)
int n;
{
int i;
for (i=0; i<=n; i++)
{
G[i] = 0.0;
A[i] = 0.0;
B[i] = 0.0;
}
}

/* output(): prints out the results of the program */

output(n,f,Ri,Ro)

double f;
double Ri;
double Ro;
int n;
{
int k;
int m;
double w;
w = 2.0*3.141592654*f;
printf("\nNormalized Values for %d order CHEBYCHEV filter @ %.2e Hz\n",n,f);
printf("\nNormalized Values assume Equal Termination\n");

m = (int) ceil( ( (double) n )/2.0 ) ;
```

```
for (k=1; k<=n; k++)
{
printf(" #: %d %.4lf\n",k,G[k]);
}

k = 2;
while (k <= n)
{
if (k < m)
printf("Inductor L%d = %.4lf uH \n",k,1.0e6*G[k]*Ri/w );
if (k == m)
printf("Inductor L%d = %.4lf uH\n",k,1.0e6*((G[k]*Ri/(2.0*w)+G[k]*Ro/(2.0*w))));
if (k > m)
printf("Inductor L%d = %.4lf uH \n",k,1.0e6*G[k]*Ro/w );
k = k+2;
}

k = 1;
while (k <= n)
{
if (k < m)
printf("Capacitor C%d = %.2lf pF \n",k,1.0e12*G[k]/(Ri*w) );
if (k == m)
printf("Capacitor C%d = %.2lf pF \n",k,1.0e12*((G[k]/(2.0*Ri*w))+(G[k]/(2.0*Ri*w))));
if (k > m)
printf("Capacitor C%d = %.2lf pF \n",k,1.0e12*G[k]/(Ro*w) );
k = k+2;
}
}

int isodd(p)
int p;
{
return(p % 2);
/* out = 0 if not odd */
}

int order(wc,ws,a,r)
double wc,ws;
double a,r;
{
double ep2;
double N;
double Acosh();
double pow();
double sqrt();
double ceil();
int M;
ep2 = ( pow(10.0, r/10.0 ) ) - 1.0 ;
N = ( Acosh(sqrt(((pow(10.0,a/10.0)) -1.0)/ep2)))/Acosh(ws/wc);
M = (int) ceil( N );
if ( M % 2 == 0 ) M = M+1;
```

```
return(M);
}

double Asinh(x)
double x;
{
double log();
double sqrt();
return(log(x + sqrt(x*x+1.0)));
}

double Acosh(x)
double x;
{
double log();
double sqrt();
return(log(x + sqrt(x*x-1.0)));
}
```

--

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1530 Eastlake Avenue East, Suite 303

3261. Elliptical: elip.c (includes elip.bas)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 17:34:23 UTC
From: novatech@eskimo.com
Message-ID: <CyuwtG.4q2@eskimo.com>
Source record: 115699

```
/* elip.c

this is an elliptic filter design program converted from
basic to c-- in a klunky way. No attempt has been made to
get rid of GOTOs, etc.

from Cuthbert's adaption of Amstutz's Algorithm

I received the basic version in response to a posting on
usenet.

Converted: November 3, 1994 by Steven D. Swift, P.E.
Seattle, Washington
*/

#include <stdio.h>
#include <math.h>

void main()

{
double B[16],C[16],D[16],E[16],F[16];
double DN;
double PI=3.14159265359;
double sqrt();
double log();
double exp();
double pow();
double sin();
double cos();
double fabs();
double FS, FP; /* stopband edge and passband edge */
int N; /* number of attenuation peaks */
double R, P, Q, S, Y, W, Z, X ;
double FC; /* geometric mean of FS and FP */
int K, J, M, L;

printf("\nSymmetrical Elliptical Filter Synthesis\n");

DN = log(10.0)/10.0;

G2010: printf("Passband edge (MHz): ");
scanf("%lf", &FP);
FP = FP*1000.0; /* convert to kHz */
printf( "Stopband edge (MHz): ");
scanf("%lf", &FS);
FS = FS*1000.0; /* convert to kHz */
```

```
if ( fabs(FS-FP) <= 0.0 ) goto G2010;
G5555: printf("\nNumber of peaks (1-15)= ");
scanf("%d", &N);
if (N<=0) goto G2010;
M = 2*N+1;
FC = sqrt(FS*FP);
R=FC+FC;
for ( K=1;K<=2;K++) {
S=FS+FP;
for( J= 1; J<=6; J++) {
P=sqrt(S*R);
S=(S+R)/2.0;
if (1.0e+08*(S-P) <S) goto G2170;
R=P; }
G2170: if(K>=2) goto G2200;
Q=( (double) M)/S;
R=fabs(FS-FP); }

G2200: Q=Q*S;
S=exp(-PI/Q);
Y=S;
printf("Critical Q= %lf\n", Q/(4.0*(1.0-S)*pow(S,(double) N)) );

printf("Stopband rejection (dB) = ");
scanf("%lf", &S);
if (S<=0.0) goto G2010;
S=exp(S*DN/2.0);
R=exp(PI*Q);

P=(log(1.0+(S*S-1.0)/( pow((R/4.0+1.0/R),2.0) )) )/DN;

printf( "Passband Ripple(dB)= %lf\n",P);
R=R/(2.0*(S+sqrt(S*S-1.0)));
R=log(R+sqrt(R*R+1.0))/(2.0*Q);
R=sin(R)/cos(R);
W=R;
printf( "3 dB (kHz) about= %lf\n", FP+(FS-FP)/(1+FC/(FP*R*R)) );
printf( "Nominal ohms resistance=");
scanf("%lf", &R);
if (R<=0.0) goto G5555;
Z=Y;
E[N]=W;
W=W*W;

for (J=1; J<= M-1; J++) {
F[J]=1;
}

K=1;
for (J=1; J <= 1024; J++) {
F[K]=F[K]*(1-Z)/(1+Z);
if (K<M-1) goto G2500;
```

```
Z=Z*Y;
X= pow( ((1-Z)/(1+Z)), 2.0);
E[N]=E[N]*(W+X)/(1+W*X);
K=0;
G2500: Z=Z*Y;
if( Z<2.5E-19) goto G2530;
K=K+1;
}

G2530: for (J=1; J <= N; J++) {
F[J]=F[J]*F[M-J];
F[M-J]=F[J];
}

for (J=1;J <= N; J++) {
D[J]=F[2*J]*(1.0-pow(F[J],4.0))/F[J];
B[J]=E[N]*F[J];
}

C[1]=1/B[N];

for (J= 1; J <= N-1; J++) {
C[J+1]=(C[J]-B[N-J])/(1+C[J]*B[N-J]);
E[N-J]= E[N+1-J] + E[N]*D[J]/(1+B[J]*B[J]); }

for (J= 1; J <= N; J++) {
B[J]=((1+C[J]*C[J])*E[J]/D[J]-C[J]/F[J])/2.0;
C[J]=C[J]*F[J];
D[J]=F[J]*F[J]; }

B[N+1]=B[N];
C[N+1]=C[N];
D[N+1]=D[N];

if (N==1) goto G6020;

L=1;
G5030: for(K=L+2; K <= N+1; K+=2) {
for(J=L; J <= K-2; J+=2) {
Y=C[J]-C[K];
Z=1.0/(Y/(B[J]*(D[K]-D[J]))-1.0);
B[K]=(B[K]-B[J])*Z*Z-B[J]*(1.0+Z+Z);
C[K]=Y*Z; } }

if (L==2) goto G6010;

L=2;
goto G5030;

G6010: S=B[N]/B[N+1]-1;

G6020: Q=.0005/(PI*FC);
```

```
P=Q*R;
Q=Q/R;

if (FS<FP) goto G6150;
printf("\n\t** Low-Pass Filter **\n\n");

for (J=1; J<=N; J++) {
C[J]=Q*C[J];
D[J]=Q*B[J]*D[J];
B[J]=P/B[J];
F[J]=FC/F[J]; }

C[N+1]=Q*C[N+1];
goto G6230;

G6150: printf("\n\t** High-Pass Filter **\n\n");

for (J=1;J<=N;J++) {
C[J]=Q/C[J];
D[J]=Q/(B[J]*D[J]);
B[J]=P*B[J];
F[J]=FC*F[J]; }

C[N+1]=Q/C[N+1];

G6230: printf("kHz \t\tpicoFarads \t\tmicroHenrys\n\n");

for (J=1;J<=N;J+=2) {
printf("\t\t%0.1lf \n\n", C[J]/1.0e-12);
printf("%0.3lf %d\t%0.1lf\t\t%0.3lf\n\n",F[J],J,D[J]/1.0e-12,B[J]/1.0e-6 );
}

printf("\t\t%0.1lf \n\n", C[N+1]/1.0e-12);

if (N==1) exit() ;

L=(int) ((N+1)/2)*2;
K=M-1-L;

for (J=L+2; J<=M-1; J+=2) {
printf("%0.3lf %d \t%0.1lf \t\t%0.3lf\n\n",F[K],K,D[K]/1.0e-12, B[K]/1.0e-6);
printf("\t\t%0.1lf \n\n", C[K]/1.0e-12);
K=K-2; }

printf("\nprecision test: %lf\n",S);

}

/* ------------------------------------------------------------ */

/* Original basic program is below

11 ' from Cuthbert's adaption of Amstutz's Algorithm
1010 DIM B(16),C(16),D(16),E(16),F(16)
1015 CLS
1018 PRINT"Symmetrical Elliptical Filter Synthesis"
1020 DN=LOG(10)/10:PI=3.1415926#
```

```
2010 PRINT "Stopband edge (KHz): ":INPUT FS
2020 PRINT "Passband edge (KHz): ":INPUT FP
2030 IF ABS(FS-FP)<=0 GOTO 2010
2040 PRINT"Number of peaks (1-15)= ";:INPUT N
2050 IF N<=0 GOTO 2010
2060 M=2*N+1
2080 FC=SQR(FS*FP)
2090 R=FC+FC
2100 FOR K= 1 TO 2
2110 S=FS+FP
2120 FOR J= 1 TO 6
2130 P=SQR(S*R)
2140 S=(S+R)/2
2150 IF 1E+08 * (S-P) <S GOTO 2170
2160 R=P:NEXT J
2170 IF K>=2 GOTO 2200
2180 Q=M/S
2190 R=ABS(FS-FP): NEXT K
2200 Q=Q*S
2210 S=EXP(-PI/Q)
2220 Y=S
2230 PRINT"Critical Q=";Q/(4*(1-S)*S^N)
2250 PRINT"Stopband rejection (dB) = ";:INPUT S
2260 IF S<=0 GOTO 2010
2270 S=EXP(S*DN/2)
2280 R=EXP(PI*Q)
2290 P=(LOG(1+(S*S-1)/(R/4+1/R)^2))/DN
2300 PRINT "Passband Ripple(dB)=";P
2310 R=R/(2*(S+SQR(S*S-1)))
2320 R=LOG(R+SQR(R*R+1))/(2*Q)
2330 R=SIN(R)/COS(R)
2340 W=R
2350 PRINT "3 dB (KHz) about=";FP+(FS-FP)/(1+FC/(FP*R*R))
2360 PRINT "Nominal ohms resistance=";:INPUT R
2370 IF R<=0 GOTO 2040
2390 Z=Y:E(N)=W:W=W*W
2400 FOR J= 1 TO M-1
2410 F(J)=1: NEXT J
2420 K=1
2430 FOR J = 1 TO 1024
2440 F(K)=F(K)*(1-Z)/(1+Z)
2450 IF K<M-1 GOTO 2500
2460 Z=Z*Y
2470 X=((1-Z)/(1+Z))^2
2480 E(N)=E(N)*(W+X)/(1+W*X)
2490 K=0
2500 Z=Z*Y
2510 IF Z<2.5E-19 GOTO 2530
2520 K=K+1: NEXT J
2530 FOR J= 1 TO N
```

```
2540 F(J)=F(J)*F(M-J)
2550 F(M-J)=F(J):NEXT J
3010 FOR J= 1 TO N
3020 D(J)=F(2*J)*(1-F(J)^4)/F(J)
3030 B(J)=E(N)*F(J):NEXT J
3040 C(1)=1/B(N)
3050 FOR J= 1 TO N-1
3060 C(J+1)=(C(J)-B(N-J))/(1+C(J)*B(N-J))
3070 E(N-J)=E(N+1-J)+E(N)*D(J)/(1+B(J)*B(J)):NEXT J
4010 FOR J= 1 TO N
4020 B(J)=((1+C(J)*C(J))*E(J)/D(J)-C(J)/F(J))/2
4030 C(J)=C(J)*F(J)
4040 D(J)=F(J)*F(J):NEXT J
4050 B(N+1)=B(N):C(N+1)=C(N):D(N+1)=D(N)
5010 IF N=1 GOTO 6020
5020 L=1
5030 FOR K= L+2 TO N+1 STEP 2
5040 FOR J= L TO K-2 STEP 2
5050 Y=C(J)-C(K)
5060 Z=1/(Y/(B(J)*(D(K)-D(J)))-1)
5070 B(K)=(B(K)-B(J))*Z*Z-B(J)*(1+Z+Z)
5080 C(K)=Y*Z:NEXT J
5081 NEXT K
5082 IF L= 2 GOTO 6010
5083 L=2:GOTO 5030
6010 S=B(N)/B(N+1)-1
6020 Q=.0005/(PI*FC)
6030 P=Q*R:Q=Q/R
6040 IF FS<FP GOTO 6150
6060 PRINT" ** Low-Pass Filter **"
6070 FOR J= 1 TO N
6080 C(J)=Q*C(J)
6090 D(J)=Q*B(J)*D(J)
6100 B(J)=P/B(J)
6110 F(J)=FC/F(J):NEXT J
6120 C(N+1)=Q*C(N+1)
6130 GOTO 6230
6150 PRINT" ** High-Pass Filter **"
6160 FOR J= 1 TO N
6170 C(J)=Q/C(J)
6180 D(J)=Q/(B(J)*D(J))
6190 B(J)=P*B(J)
6200 F(J)=FC*F(J): NEXT J
6210 C(N+1)=Q/C(N+1)
6230 PRINT " KHz microFarads microHenrys"
6240 FOR J= 1 TO N STEP 2
6250 PRINT TAB(30);:PRINT USING "##########.######";C(J)/.000001
6260 PRINT USING"##########.######"; F(J);J;D(J)/.000001;B(J)/.000001:NEXT J
6270 PRINT TAB(30);:PRINT USING "##########.######";C(N+1)/.000001
6280 IF N=1 THEN STOP
```

```
6290 L=(INT((N+1)/2))*2:K=M-1-L
6300 FOR J= L+2 TO M-1 STEP 2
6310 PRINT USING "##########.######";F(K);K;D(K)/.000001;B(K)/.000001
6320 PRINT TAB(30);:PRINT USING "##########.######";C(K)/.000001
6330 K=K-2:NEXT J
6340 PRINT:PRINT:PRINT" precision test:";S
7020 INPUT Q$
7030 IF Q$="q" OR Q$="Q" THEN RUN "menu" ELSE GOTO 1015

*/

--

Steven D. Swift, P.E. ( novatech@eskimo.com )
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303
```

3262. Filter programs .signature eaten.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 17:43:20 UTC
From: novatech@eskimo.com
Message-ID: <Cyux8G.5p6@eskimo.com>
Source record: 115700

I just noticed that the last lines of my .signature were
eaten by postnews. For those who care, here is my real
.signature:

Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303
Seattle, Washington 98102 USA
(206) 328-6902, FAX 206-328-6904

(opinions expressed are my own)
--

Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC.
1530 Eastlake Avenue East, Suite 303

3263. Re: PC BRDS XY RESIST INK?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 19:40:16 UTC
From: mzenier@netcom.com
Message-ID: <mzenierCyv2n5.8zF@netcom.com>
Source record: 115701

Tom Alldread (tom.alldread@kbsbbs.com) wrote:
: I have heard that there is a resist ink available for X/Y pen
: plotters that one can use with an appropriate CAD program to draw a
: circuit pattern directly onto bare board stock. My understanding is that
: the resulting board can then be etched directly without any intermediate
: processing steps.

There was a lot of discussion of this in sci.electronics about a year ago.
Here's the parts I remember. Sorry I can't give credit to those
knowledgeable.

The recommended ink was Staedtler permanent red. The problem is that
it's not longer imported as a liquid ink because the market was too
small to justify the cost of compliance with the hazardous chemical
laws and regulations. You can get marking pens with the ink already
in them, just not the liquid ink for use in reinkable plotter pens.

One of the pens I bought as a result of the discussion was a
Staedtler Lumocolor 313. (Havn't got around to using it yet. ;-( )

Mark Zenier mzenier@netcom.com mzenier@eskimo.com

3264. help with an old heathkit 10/15/20/40/80meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 19:42:04 UTC
From: jsherman@nyx10.cs.du.edu
Message-ID: <39jbic$ndi@nyx10.cs.du.edu>
Source record: 115652

I've just found (actually, been given) an old Heathkit (by Daystrom)
transmitter. I was wondering if anyone could tell me anything about it,
especially what crystals it uses and specs on the mike plug. It's got space
for four different crystals in the back with a selector on the front. There
is also a band selector (10, 15, 20, 40, 50) and the usual plate tuning
knobs and frequency tuning knob. Can anyone help me out on this one? There's
also a VFO selector and jacks in the back for it but I doubt I'd be lucky
enough for anyone to have ideas on that one! :) Thanks, all!
--
sysjns@etacrs1.safb.af.mil

3265. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-06 21:31:58 UTC
From: lkollar@nyx.cs.du.edu
Message-ID: <39ji0e$qjk@nyx.cs.du.edu>
Source record: 115654

Jeffrey, weren't you the guy who posted all the schematics for the single-band CW xmtrs some time last year? Maybe it was another Jeff @ Hawaii.edu...

Looking for something simple I can build with my son this winter, I am --
--
Larry Kollar, KC4WZK | I like CW, but that doesn't mean I think every ham
lkollar@nyx.cs.du.edu | should have to learn it.
Crawling down the infobahn at 1200 baud...

3266. Re: FM Crystal Set

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 00:40:48 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <39jt2g$4rh@franklin.cc.utas.edu.au>
Source record: 115702

Here is an excellent response from Ross Alexander:

In rec.radio.amateur.homebrew you write:

```
> Germanium Diode eg OA91
>AERIAL---+----(((((((----+--------+-\ | /|
> | L1 | | ---|/ |-----+-------------o
> | | | |\ | |
> | $ | | \| |
> | L2 $ | --- OUTPUT
> --- $ --- C4 --- 0.001uF
> C1 --- | C3 --- |
> |120-140pF --- | 50 pF |
> | C2 --- |tuning |
> | |0.001uF | |
> | | | |
>EARTH----+----------------+--------+--------------++-------------o
```

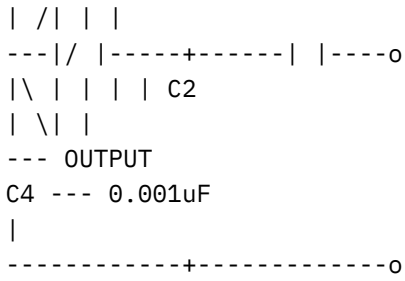
>The circuit is described as using the slope detection method for demodulating
>FM. Could someone please explain how this works, in general and for the above
>circuit?

Slope detection is a technique that relies on the frequency
selectivity of a high Q tank circuit to get an AM response from an FM
signal. As such, it's an ugly hack.

Considering your diagram, L2 and C2/C3 form a parallel resonant tank.
(C1/L1 are an L-network whose job is to step the low antenna impedance
up to the high impedance of the L2-C2/C3 tank.) Say the FM signal is
centered at 65 MHz and varies +/- 50 Khz. Now, let's assume the tank
is resonant at 65.05 MHz.

On large FM excursions (ie, "loud" modulation),
the tank circuit has a large RF voltage across it when the FM carrier is
at 65.05, but when the carrier shifts down to 64.95, the RF voltages
are much smaller because the tank is now out-of-tune. The diode
(I'd use a 1n34a or equivalent) changes the RF to pulsating DC, and
C4 integrates this into audio signals.

Now, when the FM modulation is zero, there's still an intermediate RF
voltage across the L2-C2/C3 tank because the carrier is now parked at
65 MHz., and the diode/integrator circuit would be expected to produce
a steady DC voltage *except* that C2 blocks this. So there's no
output. It might be a little easier to understand if you imagine C2
like this:



regards,
Ross ve6pdq
--
Ross Alexander VE6PDQ rwa@cs.athabascau.ca,
(403) 675 6311 rwa@auwow.cs.athabascau.ca

Television is chewing gum for the eyes. -- Frank Lloyd Wright

3267. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 02:53:33 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CyvMp9.BqL@news.Hawaii.Edu>
Source record: 115703

little@iamu.chi.dec.com (Todd
>Little) wrote:
>
> Does anyone know of a good source for inexpensive high impedance earphones?
> I need about 20 of them for the radio club at the local elementary school.
> I'm going to have them build one of these radios as a first project.

Todd - Radio Shack sells a small audio transformer with a 1k-ohm
center tapped primary and an 8 ohm secondary. Catalog number
273-1380 - $1.85 (Hawaii 1994 catalog).

Jeff

--
Jeffrey Herman, NH6IL (ex: WA6QIJ, ex: NMO CW operator)
Mathematics Lecturer and tenured Ph.D. student
University of Hawaii, Central Pacific Ocean

3268. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 02:59:04 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CyvMyH.BuM@news.Hawaii.Edu>
Source record: 115704

lkollar@nyx.cs.du.edu (Larry Kollar) writes:
>
>Jeffrey, weren't you the guy who posted all the schematics for the single-
>band CW xmtrs some time last year? Maybe it was another Jeff @ Hawaii.edu...
>
>Looking for something simple I can build with my son this winter, I am --

The only problem with those circuits is that they're 1968 vintage and
the transistors aren't available now; at least my Newark catalog doesn't
list them. Even the x-sistor replacement books don't list them.

They need to be redrawn using the ever available 2N2222A; I've got
dozen of those I found in the dumpster behind the engineering building
on campus...

73,
Jeff

--
Jeffrey Herman, NH6IL (ex: WA6QIJ, ex: NMO CW operator)
Mathematics Lecturer and tenured Ph.D. student
University of Hawaii, Central Pacific Ocean

3269. Looking for schematic for Pulser MB200

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 03:33:50 UTC
From: mike@io.org
Message-ID: <39k76u$c91@ionews.io.org>
Source record: 115705
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.shortwave

Anyone familiar with a Pulser MB200?

I'd like to get a schematic for it for the purpose of trying to add a
bfo to it to receive ssb.

Also, I'd appreciate any information on how to do this mod, or if
it's even possible.

Mike
--
==
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==

3270. Re: Chebychev: cheb.c

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 03:54:20 UTC
From: mike@io.org
Message-ID: <39k8dc$d8e@ionews.io.org>
Source record: 115706

Could you post an example of the input data to give this program and
a corresponding schematic for the filter?

Mike
--
==
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==

3271. Re: Elliptical: elip.c (includes elip.bas)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 03:55:28 UTC
From: mike@io.org
Message-ID: <39k8fg$dat@ionews.io.org>
Source record: 115707

Could you post an example of the input data to give this program and
a corresponding schematic for the filter?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

3272. Re: Butterworth: butter.c

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 03:56:51 UTC
From: mike@io.org
Message-ID: <39k8i3$dgu@ionews.io.org>
Source record: 115708

Could you post an example of the input data to give this program and
a corresponding schematic for the filter?

Mike
--
==
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==

3273. Re: VCO in Key Components of Mod RCVR Design (QST)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 04:26:58 UTC
From: paulbreed@aol.com
Message-ID: <39kaai$2fm@newsbf01.news.aol.com>
Source record: 115709

In article <3988e8$klb@bmerha64.bnr.ca>, kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:

<snip>
Where do I get a 9.2nH Inductor
<snip>

I sent the ARRL E-Mail questioning this value and they sent me back a note saying that it was a mis-print and should be 92nH not 9.2, the 92 looks about right given the parallel C of all those diodes and the stated frequency range.

Paul Breed

3274. 300 Watt AM transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 04:42:23 UTC
From: skeeterbdg@aol.com
Message-ID: <39kb7f$3m7@newsbf01.news.aol.com>
Source record: 115710

Here is the more technical information on the Omni-300 AM Broadcast Transmitter. This is a long message, but contains pretty much everything you need... ...if you need more, let me know...

This transmitter was built and sold in June of 1992 by Omnitronix of PA. The transmitter was financed but ended up being repossessed in early 1994. It is in perfect condition and is ready to go! We are asking for $6000 or best offer--we have to sell it.

Electrical Description:
All Omnitronix transmitters are 100% solid state using extremely efficient pulse duration modulation (PDM) techniques. The nominal frequency range of the transmitter is 535 Khz to 1705 Khz. Front panel status indicators and meters facilitate diagnostics and operation. All components are mounted on plug-in modules accessible from the front for ease of maintenance thus, minimizing downtime. The high reliability, greater ruggedness and excellent AC to RF conversion efficiency translates into a very short payback period. The transmitter consists of four major sub-assemblies all in one rack mountable case. They are the Control circuitry, the Power Amplifier section, the Antenna Interface Unit, and the Power Supply circuitry.
The Control Motherboard connects the Stereo Interface PCB, the PDM Exciter PCB, the Audio Processor PCB, the VSWR Protection PCB and the Control PCB. All system monitoring is accomplished with front panel analog meters and LED's.
The 300 Watt Power Amplifier Modules plug into a motherboard in the Power Amplifier Panels. Cooling is accomplished by drawing air in from the rear of the transmitter and exhausting it via the front panel grills. The Antenna Interface Unit contains the Harmonic Filter, High Power Combiners, and the Directional Coupler. A hermetically sealed spark gap used to protect against antenna transient voltages. VSWR monitoring is accomplished using the dual directional coupler. Additional, lightning protection is afforded by the topology of the harmonic bandpass filter.
The Power Supply Panel encompasses the isolation transformers, low and high voltage rectifiers, MOV's for power line surges, the power supply filter capacitors, fuses and circuit breakers, the Power Supply PCB and the power contactors.

Mechanical Description:
The transmitter is enclosed in a standard 19 inch relay rack. The transmitter is manufactured in modular 19 inch panels that are easily removable from the rack. No components are mounted to the cabinet.

Technical Specifications:
Power output: 300 watts

Emission type: A3
Frequency Range: 535 KHz to 1710 KHz
Output impedance: 50 ohms, unbalanced, type N connector
Exciter: Crystal Oscillator or Frequency Synthesized (option) 9/10 KHz
steps
Frequency Stability: x5 ppm
Audio input impedance: 600 ohms
Audio input level: -10 dBm to + 10 dBm
Modulation: Up to 125% positive peak
Frequency Response: +0.3 dB, -0.7 dB 20 Hz - 10 KHz
Audio distortion: <1% 20 Hz - 10 KHz
Spurious and Harmonic Energy: Meets FCC spec through factory set filters
Remote Control: Transmitter On/Off, Reset, Power Cutback, Metering
Power Cutback: 5 field-selectable settings

Electrical Specifications:
Line voltage: 200 VAC 10%
Line frequency: 50/60 Hz
Power consumption with no modulation: 500 watts,
at 100% modulation: 800 watts

Front Panel Indications
PA Module Voltage, Power, and Over-temperature LED indicators
RF Output Meter Power (Forward or Reverse)
AC/DC Volts Multimeter
High Voltage Ammeter
High VSWR, Over-Voltage

Electronic Protection:
Overvoltage: 20% (automatic shutdown)
Undervoltage: -40% (automatic shutdown)
Overheating: Automatic shutdown of individual amplifier modules
High VSWR: >1.2:1, full modulation (automatic shutdown)
Automatic Restart: 3 attempts before switching to "Standby"
Input Transient Protection: Isolation transformer and surge suppressors
Output Protection: Gas tube on transmission line

Mechanical Specifications:
Temperature: 0-50 C, derate 2 C per 300 mtrs (1000 ft)
Altitude: 0-3000 mt (10,000 ft)
Width: 49 cm (19 in)
Height: 27 cm (10.5 in)
Depth: 66 cm (26 in)
Cooling: Low velocity air
Weight: 31 Kg (68 lb)
Type Approval: FCC ID HT9TX300

For additional information, or to make a bid, please email me back
directly.

Thank you,
Brett

3275. Re: Battery Backup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 06:21:42 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov7.062142.5206@ke4zv.atl.ga.us>
Source record: 115711

In article <CyuL3B.IIo@metronet.com> kf5mg@metronet.com writes:
>I'd like to put together a battery backup system that will run my packet
>setup. I've got 4 radios, 4 tncs, and 2 pcs. I'm thinking of using 5 - 10
>auto or boat batteries and keeping them float charged with a 50 amp power
>supply. Does anyone know where I can find a book or QST article that might
>help me figure out what I need to do to get started? Thanks.

You don't want to use auto starting batteries. They aren't designed
for deep discharge. You want to use traction batteries or marine
trolling motor batteries that are designed for deep discharge. Or
even better, you want to use stationary batteries that are designed
for backup service. Sam's Club has a good deal on deep cycle marine
batteries, and you can often get used stationary batteries from
large computer centers. They usually replace their batteries on
a fixed time schedule, and the batteries usually have years of life
left in them. You can often get them for the asking.

Sounds like you're going to have a fairly big power demand. The first
thing you need to do is figure exactly how much power you need, and how
long you might expect to need it, from the batteries. That'll allow you
to figure the sizing of the system. The TNCs generally are a light 12 volt
load, and the radios will each need a moderate (or heavy) amount of 12 volt
current, but the PCs likely need 110 VAC. That means you'll need an inverter.
Because solid state radios typically perform poorly with sagging voltage,
they really want to see 13.8 volts, you may have a problem running them
directly off the batteries for extended periods.

I'd suggest you think about series connecting the batteries so you have
a terminal voltage in the neighborhood of 100 volts fresh and 84 volts
at discharge. Feed that to an inverter (that's a standard voltage for
heavy inverters), and let it regulate the voltage to be spot on at 110 VAC.
Then run the computers off of that, and use a regular power supply to
run the radios and TNCs. That's not quite as efficient of battery power
as possible, but the better regulation, and the lighter current draw
with the series connection, will likely override that consideration.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3276. Need Info.Memory Batt Backup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 09:47:12 UTC
From: VK2YQA@vk2yqa.ampr.ORG
Message-ID: <2810@vk2yqa.ampr.org>
Source record: 115618

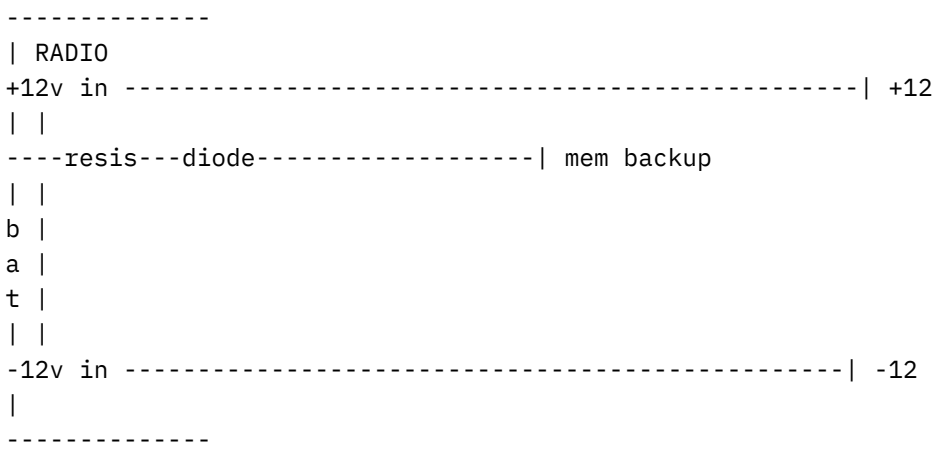
Gidday Don

> I have a ICOM IC25-A that I use mainly in the shack on a power supply.
> When I turn off the power supply, the memories go away. Does anyone have
> any Ideas on adding a battery backup just to support the memories? I was
> thinking of adding a nicad.

My IC25A actually has a nicad, battery backup unit strapped to the back
of it. It as standard Icom accessory.

It consists of a 9v nicad being charged by the incoming supply and it's
output going to the third pin/memory backup. The cct diagram for the 25A
is at work. (4:30AM at moment) Leave me a msg if you want more info.

The cct diag of the nicad section was something like this.



73's from Bob in Armidale NSW Australia. System on 24hrs
VK2YQA@?????? [44.136.33.8] vk2yqa@vk2yqa.ampr.org
vk2yqa@vk2djg.une.edu.au

3277. Re: Local TV Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 13:43:49 UTC
From: vbreault@rinhp750.gmr.com
Message-ID: <VBREAULT.94Nov7084349@rinhp750.gmr.com>
Source record: 115712

In article <TStewart.68.2EB9A108@massey.ac.nz> T.Stewart@massey.ac.nz writes:

I've got kids who occasionally get up late and watch TV when we're asleep (and
they are suppose to be too!!).

Anyone have any ideas on how to build a jammer (or modify existing equipment)
which will interfer with stations on the VHF/UHF band. Only for 50
meters or so of course, so as not to interfer with the neighbours.

Is this simple or is the task quite complex?

Terry, what you propose to do is probably illegal.(It is illegal in the
U.S.) and rather difficult to do.

You don't have a technical problem. You have a administrative problem.

When faced with a similar problem, I cut the television power cord in
half and put in some odd military type mating connectors from my junk
box. If the children abused their television privileges then I simply
removed the cord and put it into my briefcase. The power cord went to
work with me the next day and the children went without television
until I returned home.

They're bright enough to learn from this kind of first hand experience.
It took four or five occurances, but now they know that if the television
becomes a problem then I'll remove the problem. They don't let it
become a problem any more.

--
Val Breault - N8OEF - vbreault@gmr.com \ /|
Instrumentation dept. GM R&D Center \ / |
My opinions are not necessarily those of \ /__|
GMR nor of the General Motors Corporation \/ |___

3278. RE: Local TV Jamming

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 13:51:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <01HJ6XINFWLU001KX5@uthscsa.edu>
Source record: 115713

Instead of jamming the station (quite complex), why don't you build
a notch filter? Or even better, you can buy these things for about $25 for
tunable filters and about $40 for fixed channel notches. They are usually
around 60+db down, more than enough for even the strongest stations.
Usually you can find adds for these things in the back of Popular
Electronics
and other magazines like that. I think they are available up to about
channel
35 or so. They are used by many cable companies to block out premium
channels. Good luck..

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

Liberals measure compassion by how many people they are helping.
Conservatives measure compassion by how many people no longer need
their help.
--Jack Kemp

| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
****

3279. About the Digest version of this

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 15:02:52 UTC
From: mack@mails.imed.COM
Message-ID: <9410077842.AA784228491@mails.imed.com>
Source record: 115714

It appears that MANY of you receive each message for this group as an individual message. Many others (like myself) receive a big glob of messages once a day. This is the reference to "Digest" in some of my posts. For those wishing to subscribe to the digest version here is the header from the digest:

BEGIN QUOTE

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

END QUOTE

I hope this helps clear up some of the questions.

Ray Mack
WD5IFS
mack@mails.imed.com

3280. PC Switching Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 15:44:37 UTC
From: dshalita@rogue.com
Message-ID: <1994Nov7.154437.15259@rogue.com>
Source record: 115715

I'm posting this for a new ham. He would like to use a switching power supply for his main station source. He has 6 or more switching power supply's salvaged from PC 386 computers. The main loads will be a 50 watt CW or SSB radio and a 20 watt packet tnc, radio and amp combo.

He may have to combine a couple of these switchers to obtain enough current capacity. Not sure how to rig these in parallel to guarantee load sharing. Not sure this is a good idea...comments please.

I advised him to purchase a big Astron PS instead.
Are there any reasons why it is NOT advisable to use these switchers?
I recall from past discussions, but cannot remember details,
1. Need for preloads on plus 5v
2. Concerns about noise
3. Continous real current capacity of the +12v supply
when the other supplies are unloaded.

Appreciate any recommendations.
73 Dave, W6MIK
dshalita@rogue.com

--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

3281. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 16:30:32 UTC
From: burt@teleport.com
Message-ID: <39lkn8$qpk@sandra.teleport.com>
Source record: 115653

In article <Cyt9nw.84w@news.Hawaii.Edu>,
Jeffrey Herman <jeffrey@math.hawaii.edu> wrote:
>I sure hope someone is collecting all these articles and will find
>an archive site for them. This topic is quite interesting, and reading
>it is like taking a step back in time. It's almost as if we're seeing
>radio receivers invented all over again.
>
>Now we need some ideas concerning basic transmitters.

I have saved every one! I'm working on a personal project and all of
these posts are giving me a wealth of material. Also, it's a heck of a
lot of fun! :)

-burt

--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3282. Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 16:39:27 UTC
From: burt@teleport.com
Message-ID: <39ll80$qvu@sandra.teleport.com>
Source record: 115716

In article <G.Moretti-071194095517@130.123.96.67,
Giovanni Moretti <G.Moretti@massey.ac.nz wrote:
**In article <39fb8d$lak@nntpd.lkg.dec.com>, little@iamu.chi.dec.com (Todd
**Little) wrote:
**
**
** How do you find the sensitivity of your radio? I built one and find that
** it isn't very sensitive and can't get it to tune anything other than
** the loudest local station. I'm guessing that both problems may be
** attributable to using a low impedance earphone (all I had handy). My
** assumption is that the low impedance earphone lowers the Q so much of
** the circuit that it is so broadbanded as to receive just about anything.
**
** Does anyone know of a good source for inexpensive high impedance earphones?
** I need about 20 of them for the radio club at the local elementary school.
** I'm going to have them build one of these radios as a first project.
**
**Todd

**
*An alternative is to use the audio output transformers from valve (tube)
*radios. If you look about you can find these as junk, new might be a bit
*of a problem. Using these with stereo headphone works fine, although the
*older larger style of headphone seem to be a little more sensitive than
*the "walkman" style. You can even drive a speaker that's loud enough to
*listen to in bed.
*
Giovani

When I built one of these a few years ago, I had better success when I
used the earpiece from a rotary dial telephone. Someone want to comment
on that?

-burt

--

"We are all descended from a long line of determined, resourceful,
microscopic tadpoles--champions every one." K.V.

3283. Re: help with an old heathkit 10/15/20/40/80meter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 20:15:28 UTC
From: frederick.mckenzie-1@kmail.ksc.nasa.gov
Message-ID: <frederick.mckenzie-1-0711941515280001@k4dii.ksc.nasa.gov>
Source record: 115619

In article <39jbic$ndi@nyx10.cs.du.edu>, jsherman@nyx10.cs.du.edu
(Jonathan Sherman) wrote:

> I've just found (actually, been given) an old Heathkit (by Daystrom)
> transmitter. I was wondering if anyone could tell me anything about it,

Jonathan-

Either your "50" is a typo, or the 5 was messed up. It should be "80",
for the 3.5 to 4.0 MHz band.

From your description, yours might be a model HX-10, which was similar to
the older DX-35, but may not have had a modulator. It works with the
HG-10 VFO, and matches the HR-10 receiver. Typical of these radios, would
be use of a final amplifier tube capable of around 50 watts output on CW.

Crystals were fundamental mode, usually in an FT-243 holder (Half-inch
spacing, large pins). For 80 meters, you could use either 160 meter or 80
meter crystals. On 40, you could use 80 or 40 crystals. On 20 and above,
you normally used 40 meter crystals. You might use 80 meter crystals on
the higher frequencies, but there may not have been sufficient drive, and
there is a chance you could tune up on the wrong harmonic!

I know there was a later set of similar radios (HX-20/HR-20), but there
may have also been another "economy" transmitter in the late-60's to
early-70's, with less features. I suggest you keep your eye out for one
like yours, at your next Hamfest. The owner may have more information,
and possibly a copy of the manual.

73, Fred, K4DII

3284. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 22:06:52 UTC
From: bens@adelie.cse.tek.com
Message-ID: <39m8ds$qeh@tekadm1.cse.tek.com>
Source record: 115620

In article <CynL9t.GBs@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>Oh, dear. I should know better than to jump in here, but...
>
>First, if you model a source as a Thevenin or a Norton equivalent, you
>should be aware that it is just a model to tell you what you can measure at
>the terminals. It does NOT tell you, necessarily, what is going on inside
> ....

Dear homebrewers,

I've follow this thread for a couple of weeks and Tom Bruhn's post is the first one that accurately describes the situation. Too bad that he did not go on to explain the whole reflection deal and efficiency problem (I guess he is not ready to write a book yet). I would like to help clarify a couple more points frequently mistaken in several other posts:

1. The Output Power of a Transmitter or a Power Amplifier is the power delivered into the specified load (usually 50 ohm) for ease of measurement. A 100 W Transmitter should better deliver full 100 W into this load or you ought to get your money back. This has nothing to do with Efficiency at all (see item 2 below). When there is Standing Wave (SWR > 1) part of the power is reflected back:

P(reflected) = P(incident) * |rho|^2
where rho is the reflection coefficient and
P(incident) is the 100W available from the Transmitter;

rho = (Zl - Zo)/(Zl + Zo)
where Zl and Zo are the load and output impedance, respectively.

These formulas are simpler to use when the output impedance is equal to the cable's characteristic impedance (say 50 ohm in both cases). Otherwise we'll have to apply the formula to both ends of the cable and the actual power delivered to the load depends on the phase angle of the reflections (e.g. a 50 ohm cable can become the matching transformer between a 25 ohm source and a 100 ohm load).

2. So where did the power go?

First one has to understand that

efficiency = Power delivered (when matched)

DC Power put in

and what is not delivered is dissipated. A class A amplifier has max. theoretical efficiency of 50% and the DC Power doesn't change with load.

So if our 100W transmitter requires 25V at 10A (250W, or eff.=40%) and you hook it to a 100 ohm load, then
rho = (100 - 50)/(100 + 50) = .33
P(del.) = 100W * (1 - .33^2) = 89W

Now instead of dissipating 150W in the Transmitter itself you now dissipate 250 - 89 = 161W. Class B and class C amplifiers are more efficient and dissipation changes with loading and signal amplitude, but the idea remains unchanged --> what is not delivered will be dissipated!
So if you have a 90% efficient amplifier (111W DC for 100W out), and your load is again 100 ohm instead of the expected 50 ohm, i.e. a rho of .33 as above, then the dissipation in your transmitter just doubled (it is not exact as the total DC dissipation of class B or C amplifiers changes with load).

Hope I did not create more confusion!

Benjamin Sam
yauwah.b.sam@tek.com

3285. Re: HELP NEEDED PLEASE ANYONE!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 22:15:08 UTC
From: dbotkin@aol.com
Message-ID: <39m8tc$p75@newsbf01.news.aol.com>
Source record: 115621

In article <sdarragh-011194090408@sdarragh-mac.cisco.com>,
sdarragh@cisco.com (Scott Darragh) writes:

8< snip...

Questions:

#1 Anyone know of any plans for such a beast?
#2 Can I use the same dial to tune all the bands or will I need to
incorporate many tuning knobs?

8< snip...

Check out the ARRL Handbook, especially older ones from the late 70's &
early 80's. Also, the book "QRP CLASSICS" has some nice designs.

You can build one that uses one tuning knob for all bands. Basically, you
use a VFO tuning a fairly narrow range and mix it with xtal oscillators
for the different bands, which you switch in (along with the output
filters) with a bandswitch. For example (off-the-cuff), use a 3.675 to
3.725 oscillator alone for 80, mix it with a 3.42 osc. for 40, mix it with
a 17.42 osc. for 15, etc. This is an illustrative example ONLY, there are
LOTS of good plans for multi-band QRP rigs out there.

72,
Dale Botkin, N0XAS
dbotkin@aol.com
n0xas@n0xas.#ene.ne.usa.na (packet)

3286. Re: PCB from laser print?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-07 23:19:31 UTC
From: alf@agreen.iac.honeywell.com
Message-ID: <9411072321.AA10969@inet-gw-3.pa.dec.com>
Source record: 115622

snorris@harp.aix.calpoly.edu (Sean Norris) wrote:

> I'm working on a project that requires me to make a PC board and I want
> it to be as hassle free as possible. I have seen many ads about some
> special paper which you can print with a laser printer, iron it onto the
> PC board, peel it off and then etch. Has anyone used this technique? If
> so, it it reliable? My project is all surface mount and at very high
> frequencies so the traces must be small and sharp.
> If anyone has any experience/tips/brands/etc. I would appreciate it very
> much if you could E-mail me.

> Thanks,

> Sean

> ---
> Sean Norris snorris@trumpet.aix.calpoly.edu
> --KE6BTE-- Loyalty, above all else.
> ---

Yes, I have used a version of this special film, TEK200 from Meadowlake.
I have never been able to get really good results. I can get it to print
ok on my laserjets (Canon LBP-8 and HP LJ2), or using a Xerox copier. The
problem is transferring it to the board. No matter how clean the board, or
however I set the iron, it never transfers to the extent where I consider the
touchups to be acceptable.

There was quite a discussion on this topic a while back, either here or on
sci.electronics, and several contributors claimed to get good results. I
guess I must be doing something wrong.. 8-(

I prefer the photoresist method. Its a bit more effort but gives excellent
results. I have not had much success printing to mylar film; (it appears to
depend on how hot something is in the printer). Someone here suggested printing
to tracing vellum but I dont know how easily available that is. The approach I
take is to print to regular paper stock, then brush on vegetable oil to make the
paper translucent. Using a regular 500w UV photoflood and Datak negative resist,
I get really excellent images with 15 minutes exposure.

One other hint: etching is much faster if you use a shallow dish and blow a
hair dryer on it at close range. This heats the solution and agitates it
really well. This cuts the etch time from ~40 minutes to about 10 mins, which
helps to prevent undercutting and ragged edges.

Good luck.

Alf NU8I/G4ABB

alf@agreen.iac.honeywell.com
Phoenix, Arizona

3287. Re: Local TV Jamming

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 00:40:00 UTC
From: s2202629@np.ac.sg
Message-ID: <39mhd0$g9l@nova.np.ac.sg>
Source record: 115623

Muenzler, Kevin <MUENZLERK@uthscsa.EDU> wrote:
>
>Instead of jamming the station (quite complex), why don't you build
>a notch filter? Or even better, you can buy these things for about $25 for

vbreault@rinhp750.gmr.com (Val Breault) wrote:
MU> I cut the television power cord in
MU> half and put in some odd military type mating connectors from my
MU> junk box. If the children abused their television privileges
MU> then I simply removed the cord and put it into my briefcase.
MU> The power cord went to work with me the next day and the
MU> children went without television until I returned home.

Children are _very_ resourceful (depending on how young they are). My
parents used to do the same to me, not for the TV, but for the computer.

What happened was then, we (my brother and I) got hold of a _extra_ power
cord for the computer, and when the cord was away, the backup would come to
play...

A really odd mathing connector is your best bet. You second is what my
parents did to the TV. They put it on a stand that had wheels, and carted
the whole thing into thier room and locked it up during the days when they
were at work (to make sure we don't spend all day watching TV and not
studying)

Of course, the next thing my brother and I got into was locksmithing,
picking locks, and duplicating keys, but thats another story altogether...

Rgds!

PS: Yes, we still got to watch our TV, and our parents didn't know - both
worlds were happy, and there was peace... 8)

3288. Help needed with older Kenwood HF model 9R59D

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 01:19:00 UTC
From: hirschj@vax2.concordia.ca
Message-ID: <7NOV199420195060@vax2.concordia.ca>
Source record: 115624

Does anyone have schematics or specs for this unit. I need
to know the values of a coil. Please email at:
HIRSCHJ@vax2.concordia.ca

Thanks,
Jack

3289. Re: Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 03:47:31 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <39mscj$76v@maple.enet.net>
Source record: 115625

If you really want a *grid* dipper, I can find some articles in my piles of old QSTs. The unit I own is very good: It's the AN/PRM-10 military dipper, bought about fifteen years ago at a hamfest for $10. I've seen them intermittently for sale from places like Fair Radio. Keep your eyes open. It's a terrific unit, built like a tank, as you might imagine.

Building a FET dipper is a snap; not even a weekend project if you're good mechanically. I think the most recent Handbook has a circuit, and if not that then look at some of the other ARRL books. Even calibration isn't an issue anymore. You dip the circuit, then hold the dipper near the pickup on your frequency counter. I built one that didn't even have dial marks, and it was perfectly useful! But I keep going back to the AN/PRM-10.

Good luck with it.

--73--

--Jeff Duntemann KG7JF, Scottsdale AZ

3290. Re: 300 Watt AM transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 05:28:54 UTC
From: clifto@indep1.chi.il.us
Message-ID: <CyxoK7.FtB@indep1.chi.il.us>
Source record: 115626

In article <39kb7f$3m7@newsbf01.news.aol.com> skeeterbdg@aol.com (SkeeterBDG) writes:
>All Omnitronix transmitters are 100% solid state using extremely efficient
>pulse duration modulation (PDM) techniques. The nominal frequency range
^^^

I LIKE IT!!!

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3291. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 05:57:14 UTC
From: magoo871@goshawk.csrv.uidaho.edu
Message-ID: <39n3vq$mqd@owl.csrv.uidaho.edu>
Source record: 115627

Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
> I'm working on a project that requires me to make a PC board and I want
> it to be as hassle free as possible. I have seen many ads about some
> special paper which you can print with a laser printer, iron it onto the
> PC board, peel it off and then etch. Has anyone used this technique? If
> so, it it reliable? My project is all surface mount and at very high

Sean,
I tried that technique a couple of times and got bad results both
times. For some reason I couldn't get the toner to transfer successfully
- the results were spotted at best. But don't take my word for it
though; I sure could have been doing something wrong.
The photographic process has worked well for me. It seems that
most folk like to use the "positive" process. I've been using the
negative for several years now. Unfortunately it can be a mess and a lot
of effort. Maybe someone else has done well with the toner transfer
process and would comment?
Steve
magoo871@uidaho.edu

3292. Any ideas about 12v flourescent lights?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 07:10:13 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Nov8.071013.16372@grian.cps.altadena.ca.us>
Source record: 115628

I'm looking for a schematic, a kit (or even a source of a ready-to-go boards) for flourescent tube oscillator-drivers that will allow me to run standard 4' and 8' tubes from 12v dc.

I know they exist - in fact I walked right past a bunch at a recent swap meet/flea market - but now I need to run a pair of 8' tubes, a pair of 4' tubes, and a desk light (8w ?) from 12v dc.

Please - if you reply to this please email me your reply also - the ham radio groups have a fast expiration here.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3293. Q: TRX kit assembly - What should I know?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 09:48:42 UTC
From: martin%dacws2%dac.isei.jrc.it@cen.jrc.it
Message-ID: <9411080949.AA10240@dacws2>
Source record: 115629

Hello QRP fans,

Just received a DTR 7 kit (British kit for a monoband TRX 7 MHz)

Got sum experience in homebrewing but never tried a kit...
Is there anybody here who built one already?
Experiences? Problems?
Should I know anything that is not in the manual?
If you do not know that particular kit do you have some
general advices for me?

Cuagn in QRP

Martin IK2RMZ
(Always qrv for sked requests, qrp and barefoot 100w, all
HF bands, only wire antennas)

If u decide to post a public reply pse send a copy to
my e-mail account martin.zurn@cen.jrc.it. Thanks.

3294. Dentron digital display board

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 14:15:11 UTC
From: hysell@itc.Kodak.COM
Message-ID: <9411081415.AA13637@runner.itc.Kodak.COM>
Source record: 115630

Hi all;
Can anyone provide me with information on the Dentron digital display board that Dan's Small Parts and Kits sells? Dan provides a parts placement and schematic diagram, but what I really need is a copy of the original magazine article, usage info and troubleshooting tips.
Send replies to hysell@kodak.com
Thanks and 73 de KF2XC
-John

3295. Re: Chebychev: cheb.c

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 15:17:29 UTC
From: novatech@eskimo.com
Message-ID: <CyyFtB.31J@eskimo.com>
Source record: 115651

mike@io.org (Mike Stramba) writes:

>Could you post an example of the input data to give this program and
>a corresponding schematic for the filter?

>Mike
>--
>==
>Mike Stramba Email: mike@io.org
>Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
>==

Give me a few days, and I will post examples for each program.

--
Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC. 1530 Eastlake Avenue East, Suite 303
206 328 6902, FAX 206 328 6904 Seattle, Washington 98102 USA

3296. RE: Colpitts Osc Design Info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 16:19:40 UTC
From: wade@netcad.enet.dec.com
Message-ID: <39o8es$irm@nntpd.lkg.dec.com>
Source record: 115631

>Article 4966 of rec.radio.amateur.homebrew:
>From: dshalita@rogue.com (David Shalita)

>Does anyone have a reference where I can get some very detailed infomation
>about how to design Colpitts LC Oscillators? RF Design magazine offers a
>"Oscillator Design" booklet, but I am not certain this is info for a
>person with no oscilator design experience. I have several Radio Amateur
>Handbooks and several QRP series books which never quite offer enough
>detail in choosing the coupling and the 2 feed back capacitors.
>73 and thanks, Dave W6MIK

two references should provide all the detail you will ever need:

K.K. Clarke and D.T. Hess, _Communication Circuits: Analysis and Design,"
Addison-Wesley, 1978.

W.A. Edson, "Vacuum-Tube Oscillators," Wiley, 1953.

paul N1BWT

3297. Vacuum Variable Mounting?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 16:56:48 UTC
From: rvt@susie.sbc.com
Message-ID: <39oakg$17a@sbctri.sbc.com>
Source record: 115632

OK, so now I have a vacuum cap for the linear project I've been planning for 10 or 15 years...

How are vacuum variable caps ordinarily mounted? Handbook photos don't show me much detail except for the use of turns counting dials for tuning.

A related question - do vacuum variables have mechanical stops?

--
Roger V. Thompson, P.E. |ARS AD5T
Southwestern Bell Technology Resources, Inc. |314-529-7847 (Office)
550 Maryville Centre Dr. |314-529-7674 (Fax)
St. Louis, MO 63141 |rvt@calvin.sbc.com

3298. Re: Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 17:04:57 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <CyyKsA.1n9@wb6hqk.ampr.org>
Source record: 115633

In article <39cjco$1qki@usenetw1.news.prodigy.com>,
FRANK DAMERON <DFNF67A@prodigy.com> wrote:
>I am building the gel cell charger that is in the 1993 ARRL handbook. I
>am out of town at the moment and do not know the page number or the name
>of the project in the handbook. However, it is a small charger that will
>charge gell cell batteries and can be switched between a full charge and
>float charge. The project calls for a LM3900 Quad Op Amp. I bought a
>LM2900 and was told that it work just as well and that the pinouts are
>the same.
>
>Now that I have the project almost finished I cannot get it to work
>properly. I get the right test voltage and when i adjust the trimpots
>the LED idicator will not light to tell me there is a full charge. I
>checked and rechecked the wiring, solder joints, voltages and the LED.
>
>Will the LM2900 work the same as the LM3900??

Yes. The LM2900 is just the industrial temperature version of the LM3900
and should meet or exceed all data sheet specifications.

bart

bart@wb6hqk.ampr.org

3299. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 19:00:43 UTC
From: mds@meaddata.com
Message-ID: <39ohsr$7te@meaddata.casenet.meaddata.com>
Source record: 115634

|> The photographic process has worked well for me. It seems that
|> most folk like to use the "positive" process. I've been using the
|> negative for several years now. Unfortunately it can be a mess and a lot
|> of effort. Maybe someone else has done well with the toner transfer
|> process and would comment?
|> Steve
|> magoo871@uidaho.edu

--
I have had poor results with the TEK200 also. I thought it might have
been from poor toner image from the copier so I tried to use an HP
laserjet 4, 600 dpi, printer. I set the printer for maximum density and
printed the artwork. To ensure the printer had stabilized to print a
darker image I ran about 20 copies on plain paper before running the
TEK transparency through. What I got was drop outs in the middle of
my traces. This is an indication that the transparency is not proper for
the print engine. I see this when transparencies for copiers are used on
laserjet printers. I really needed this PC board, so ran a transparency
through the laserjet that was designed for this printer. I got a nice dark
image without drop outs. Now the question was would it transfer to the
board? The board must be very clean so I placed the PC board in ferric
chloride several seconds until the copper was a uniform pink. I removed
the oxidized haze from the board with Soft Scrub and a cloth. Using an
iron I heated the transparency to the PC board. My board was 3 x 3 inches.
I let the board cool down to room temperature then tried
to peel the transparency off of the board. I was concerned that the
transparency would hold the toner better than the copper, therby pulling
the toner off of the pc board. I pulled very slowly and to my surprize
the toner stayed on the board! This is the first time direct toner
process worked. So much for the special paper!

I understand that the DynaArt product may be the best product for direct
toner pc boards. They have a catalog that includes special toner cartriges
designed for their transparency and a laminating heater to run the pc
board through to "melt" on the toner. The heater is a little expensive, but
if you want to do direct toner transfers and minimize the errors this may
be the way to go.

I still prefere the photographic mehtod. I get PC boards presensitized with
a positive resist from PCB Kits. This eliminates the problem of getting the
resist to stick to the board with an even coating. I make the positive
artwork with my PC and the laserjet 4. The laserjet appears to be accurate
enough for my purposes. The EASY PC program allows you to calibrate the
laserjet to reduce errors as the transparency moves through the printer.

Mike Suhar WB8GXB
mds@meaddata.com

3300. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 19:13:53 UTC
From: tomb@lsid.hp.com
Message-ID: <Cyyqr5.LCt@hpcvsnz.cv.hp.com>
Source record: 115635

Yauwah Benjamin Sam (bens@adelie.cse.tek.com) wrote:
: Dear homebrewers,

: I've follow this thread for a couple of weeks and Tom Bruhn's post is the
: first one that accurately describes the situation. Too bad that he did not
: go on to explain the whole reflection deal and efficiency problem (I guess he
: is not ready to write a book yet).

Benjamin sure got that one right! Sorry if I left things hanging; I'd really like to add more, but it really could get to be a book quickly. I'd like to summarize two points, though:

1. You may be able to accurately represent a source (transmitter) as a Thevenin or Norton equivalent over some range of operation (linear region), but that model doesn't tell you what goes on inside the source (transmitter). You have to know how it's built to understand that. You have to know about things like SWR protection and RF negative feedback. You have to understand the DC operating point and the collector/plate/drain characteristics of the active device(s). You have to understand how a load at the terminals is translated to a load seen by the active devices. And you have to know what that load actually is. Ultimately, you have to know about losses in the whole output circuit, though in a good design, a very big percentage of the loss will be in the output active device at the plate/collector/drain.

2. The load you put on a transmitter, whether it's a resistor connected directly or an antenna fed through a transmission line, as long at it's linear, can be represented as some impedance at the output terminals of the transmitter. There really are forward and reverse waves on a transmission line driven by a source, operating into a load that doesn't match it's impedance, but in the steady state, that just appears as some impedance at the feedpoint. For the purposes of analysis of what's going on in the amplifier, it is _exactly_equivalent_ to think of a single load impedance, or forward and reverse waves of some phase and amplitude relationship. Pick which ever one is easier for you to understand and analyze.

Sub-point: you can't analyze amplifier efficiency unless you know a lot about what's going on in the amplifier, as you change load impedances. For example, you have to know that the amplifier is staying in a linear operating region if you want to apply any simple linear equations to find efficiency.

3301. Re: PC BRDS XY RESIST IN

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-08 20:09:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9411081947112385@kbsbbs.com>
Source record: 115636

Greetings Mark:

Many thanks for the information Mark.

I am still looking for a source of used X/Y plotters. I have
seen two ads on packet radio in the last couple of years but I was too
late in both cases. A radio amateur in CA indicated they are showing up
in the flea markets. Guess I better plan on going to a big flea market
to see if I can find one, hi.

73

Very Best Regards,
T.M. Alldread INTERNET:tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3302. HomeMade Radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 00:40:16 UTC
From: mmsdc@aol.com
Message-ID: <39p5pg$g4k@newsbf01.news.aol.com>
Source record: 115637

I am interested in building a radio completely by scratch (not a crystal radio), including building my own vacuum tubes, etc. Does anyone have plans for such a thing. I want to try to stay as close as I can to early designs. If you have any such info or plans, please E-Mail them to : MMSDC@aol.com

Thanx!

3303. Measuring inductance using a.c. power line for 60h freq source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 02:08:56 UTC
From: mike@io.org
Message-ID: <39pavo$c6@ionews.io.org>
Source record: 115638

Someone suggested to me that I could use the 60hz from the a.c power line
to measure the inductance of an unknown coil.

Needless to say, I'm wary of messing with 120 volts.

Is there a safe way of doing this?

Mike
--
==========
Mike Stramba Email: mike@io.org
Toronto,Canada Internex Online - Toronto, Canada (416) 363-3783
==========

3304. DO YOU have any experience w/homebew autopatch?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 02:11:45 UTC
From: GRIDE@UCSVAX.UCS.UMASS.EDU
Message-ID: <39pb51$4i0@nic.umass.edu>
Source record: 115639

Hey all,

I just earned my Technician ticket and know a little bit about
electronics beyond what the exam requires. I have built a homemade
DTMF decoder and have hooked it up to a Commodore 64 as a logger for
scanning. I got the idea to make my Commodore into the "logic"
part of an autopatch. I looked at kits from Hamtronics (cool but
expensive) and Ramsey (cool, but already built :-( ). I think I want
to make my own based on the design from the 1994 ARRL Handbook.

My idea goes something like this:

Receiver audio out is hooked up to DTMF decoder and homemade autopatch.
Separate Transciever on VOX is hooked up to autopatch also. Upon receiving
DTMF password sequence, computer logic high drives relay via transistor
to connect to phone line. (I write the software). Use HT to dial, have
routines to hang up, flash switchhook (gotta love call waiting :-),
disable system (use A,B,C,D tones). Timeout timer for >10 mins in software.
I could build a DTMF re-dialer if my tones sent are not strong enough.
I could do voice ID's every 9.5 minutes with a gutted hallmark
voice card.

So what do you think? It is primitive, yet advanced. If you
are knowledgeable, let me know of any problems you foresee. Will
I be able to duplex effectively? Should I stick to simplex? Where
can I get info on using and driving relays? Should I use separate
transmitter and receiver, or could I use a transceiver? Could I
gut a desk phone and make one more easily? Or should I start from scratch?
If I should start from scratch, where can I get a network, and how much
will it cost me?

Thanks for taking the time to write me back. If I make it
work well, I will publish plans, software, etc. here. If I fail
miserably, oh well. That's how ya learn ;-) Eventually, with enough
blood, sweat, and money I can make it happen.

73,

Andrew
(call letters in the mail :-)

3305. Mini 9V Battery Transmitter - where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 08:36:24 UTC
From: dmercado@kaiwan.com
Message-ID: <dmercado.784370039@kaiwan009>
Source record: 115640

I'm looking for a source to make a mini transmitter about the
size of a 9V battery. Does any one have any plans or where I
can buy one?

Thanks and 73,
Dominic Mercado, dmercado@kaiwan.com

3306. Non-linear Eq'n plotter WANTED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 08:50:11 UTC
From: sylvank@central.susx.ac.uk
Message-ID: <39q2g3$nul@infa.central.susx.ac.uk>
Source record: 115641

I am looking for a Public Domain Software package that will allow me to input a non-linear equation (say the logistic equation) and the parameter(s) domain and initial condition. The output from the package must be both numerical and graphic. Graphics is of the utmost importance.

If you know of a such a program and the FTP site where it can be retrieve please reply direct to me.

Dr. J. Sylvan Katz
J.S.Katz@sussex.ac.uk

*** Dr. J. Sylvan Katz ***
Science Policy Research Unit, Mantell Building, University of Sussex,
Falmer, Brighton, East Sussex, UK BN1 9RF
Tel: (273) 686758 Fax: (273) 685865
VE5ZX & G0TZX

3307. Coax as a gamma match capacitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 14:15:31 UTC
From: grimm@alison.sbc.edu
Message-ID: <1994Nov9.101531.65@alison.sbc.edu>
Source record: 115642

I am building a five-band cubical quad for 20 through 10 meters. The method of feed will be gamma matches for each driven element. The gamma rods will be lengths of wire, but the gamma capacitor poses a problem for me. In the past I have built gamma matches and enclosed the caps in a variety of containers...pill bottles, mini-boxes, film cans, etc. No matter what I used, the capacitors eventually corroded and eventually caused trouble. Weep holes also acted as magnets for spiders, etc. Supporting the enclosure was another source of frustration. So I have been considering alternative arrangements (considering that I am going to have to build five of these things).

What I have tentatively settled on is to use variable caps for the initial tuning of the gamma matches. Once the rod and cap have been adjusted for the best match, I propose to take the variable cap out of the circuit, measure its capacitance and replace it with a fixed capacitor of equal value. OK so far, right? The obvious difficulty here is to find fixed caps equal to the precise measured value of the variable cap. Instead of trying to put together a bunch of paralled caps I plan to use an appropriate length of RG8 or RG11 cable. I vaguely recall that is is about 25pf per foot and so I would trim the length until it was exactly equal to the variable cap and solder it in place. After sealing the ends against the elements, my gamma capacitors would be weather proof, spider proof and can simply be taped to the bundle of feedlines that drop down from the boom to each of the five feed points.

I would greatly appreciate comments on this idea. I would especially like to hear from those who have empirical experience using coax as capacitors.

Have I missed something here. This seems too easy and logical to not be a part of all those how-to-buildit cubical quad articles that I have read.

73,

Ken
--

Kenneth D. Grimm K4XL
grimm@alison.sbc.edu

3308. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 16:20:56 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <39qst8$7vt@chnews.intel.com>
Source record: 115643

In article <39m8ds$qeh@tekadm1.cse.tek.com>,
Yauwah Benjamin Sam <bens@adelie.cse.tek.com> wrote:

> A 100 W Transmitter should better deliver full 100 W into this load or you
> ought to get your money back.

Hi Benjamin, 100w input power or 100w output power? One has to specify whether one is talking about input power or output power. Back in the '50s, we were legally limited to 1000w _input_ power and certainly did not deliver 1000w to the load legally.

> rho = (100 - 50)/(100 + 50) = .33
> P(del.) = 100W * (1 - .33^2) = 89W
>
> Now instead of dissipating 150W in the Transmitter itself you now dissipate
> 250 - 89 = 161W. Class B and class C amplifiers are more efficient and
> dissipation changes with loading and signal amplitude, but the idea remains
> unchanged --> what is not delivered will be dissipated!

I agree with you up to the point where the 11w of reflected power hits the transmitter. In an orginary class C ham amplifier, that 11 reflected watts is not totally dissipated in the transmitter. My measurements indicate that approximately half is re-reflected back to the load where 2/3 of it is dissipated in the load so the dissipation in the final is closer to 157 watts or so. There are re-reflections at the transmitter. Only expensive test instruments are guaranteed to show a 50 ohm load looking back at the generator.

Here are some approximate measurements made with my IC-745 and MFJ-949 power meter. With a 6-db pad in series with the coax, forward power was adjusted to 10w into a 50 ohm load and then measured as 10w into a 25 ohm load (two dummy loads in parallel). With the IC-745 putting out 10 watts without the 6db pad, forward power measured 10w into the 50 ohm load and 10.5w into the 25 ohm load. These are relative, non precision measurements but seem to indicate reflections at the transmitter output.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3309. Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 16:22:07 UTC
From: serafin@epcot.spdc.ti.com
Message-ID: <Cz0DGw.27L@spdc.ti.com>
Source record: 115644
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I am looking for plans to construct a homebrew antenna tower.
Either that or a pointer to a reference manual that would
contain that type of information. Please post your information
for the benefit of others that may be interested.

Thanks,
Mike
KC5GRW

3310. tapping a coil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-09 21:06:00 UTC
From: Bob.Klug@f239.n109.z1.fidonet.org
Message-ID: <caa_9411120020@blkcat.fidonet.org>
Source record: 115645

I am a total novice working on my first homebrew project. As I mentioned in an earlier post I am building an antenna tuner for the random wire antenna I use with my "boatanchor" SW receiver -- a 25 year old Blaupunkt AM/FM/SW radio. The instructions I am following say to wrap magnet wire around a core, then to take taps at certain turns on the coil and connect the taps to a 12-position rotary switch. I know enough to scrape the plastic (?) covering off the magnet wire, but I do not know exactly what taps are. Do I solder the rotary switch connections directly to the coil, or do I run small pieces of wire from the coil to the switch? As I said, I am a total novice and I will appreciate any advice anybody can give me. Thanks !!

Fidonet: Bob Klug 1:109/239
Internet: Bob.Klug@f239.n109.z1.fidonet.org

3311. (newbie question) Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 05:24:53 UTC
From: patricio@glhpx12.cen.uiuc.edu
Message-ID: <39sar5$njk@vixen.cso.uiuc.edu>
Source record: 115646

Howdy,
I apologize for the rather trivial nature of this question, but I am a digital guy taking an analog circuits course for the first time. Can someone give me a good intuitive explanation as to exactly *how* a capacitor and inductor combination can change the effective real resistance of a load? ie, how does a matching network work? Does it kind of "temporarily store" some of the signal energy in the form of electromagnetic fields and then release it to the load? I am talking about lumped element passive circuits here. Also, we are just now doing scattering parameters of two ports. We are talking about stability and plotting the stability circles in the gamma-L plane. What I do not understand is the physical significance of gamma-in's inside the stability circle and those outside. ie, why aren't values of gamma-in inside the circle always stable and those outside always unstable or vice versa? It seems rather arbitrary to have the stable region be the inside of the circle sometimes and other times have it be the outside of the circle, depending on S11. I suppose I am just looking for some general rules of thumb as to what kinds of loads would cause instability. Thanks very much.

--
Andrew Patricio "Son, you got a panty on yur head."
University of Illinois "Just drive, fast."
patricio@coewl.cen.uiuc.edu
http://www.cen.uiuc.edu/~patricio/home.html

3312. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 05:42:57 UTC
From: z007298b@bcfreenet.seflin.lib.fl.us
Message-ID: <39sbt1$na@bcfreenet.seflin.lib.fl.us>
Source record: 115647

Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
: I'm working on a project that requires me to make a PC board and I want
: it to be as hassle free as possible. I have seen many ads about some
: special paper which you can print with a laser printer, iron it onto the
: PC board, peel it off and then etch. Has anyone used this technique? If
: so, it it reliable? My project is all surface mount and at very high
: frequencies so the traces must be small and sharp.
: If anyone has any experience/tips/brands/etc. I would appreciate it very
: much if you could E-mail me.

: Thanks,

: Sean

: --
: Sean Norris snorris@trumpet.aix.calpoly.edu
: --KE6BTE-- Loyalty, above all else.
: --

--

Eliot Fenton
z007298b@bcfreenet.seflin.lib.fl.us

3313. PCB cad software ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 06:06:13 UTC
From: chrise@n0jcf.stpaul.mn.us
Message-ID: <39sd8l$7hv@n0jcf.stpaul.mn.us>
Source record: 115648

After the recent discussions about how to make a board from laser printer output... I'm curious what software folks are using to generate the artwork. I'm specifically interested in a low-cost package that can be used to make stripline designs (lots of area fills, tapered lines, etc) rather than something that caters to plunking down a bunch of 40-pin DIPs. I've looked at several of the demo packages in the Simtel and CICA archives and it seems to be pretty hard to make any of them do something like a 100 mil line that tapers down to a pin on a MIMIC for example.

What's your favorite ? DOS or Windows... either is OK.

Thanks for any comments.

Chris

--
Chris Elmquist, N0JCF
chrise@n0jcf.com
n0jcf@amsat.org

3314. Re: THE LITTLE RAZOR BLAD

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 14:15:00 UTC
From: hua.chu@channel1.com
Message-ID: <40.2899.2425@channel1.com>
Source record: 115649

BK>I have saved every one! I'm working on a personal project and all of
BK>these posts are giving me a wealth of material. Also, it's a heck of a
BK>lot of fun! :)

Please upload them to a public site so's we can all get at them. You'll
be doing a great service. B-).

-H.C.

---
* OLX 2.1 * It's only a hobby ... only a hobby ... only a

3315. Re: PCB Board from laser print??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 15:33:59 UTC
From: kgk@nwu.edu
Message-ID: <kgk-1011940933590001@kgkmac.repoc.nwu.edu>
Source record: 115650

In article <39sbt1$na@bcfreenet.seflin.lib.fl.us>,
z007298b@bcfreenet.seflin.lib.fl.us (Eliot Fenton) wrote:

> Sean Norris (snorris@harp.aix.calpoly.edu) wrote:
> : I'm working on a project that requires me to make a PC board and I want
> : it to be as hassle free as possible. I have seen many ads about some
> : special paper which you can print with a laser printer, iron it onto the
> : PC board, peel it off and then etch. Has anyone used this technique? If
> : so, it it reliable? My project is all surface mount and at very high
> : frequencies so the traces must be small and sharp.
> : If anyone has any experience/tips/brands/etc. I would appreciate it very
> : much if you could E-mail me.
>
> : Thanks,
>
> : Sean
>

I'm sending this via e-mail to Sean and also posting this incase others
may find it useful.

I've used something called Press-n-Peel, purchased from Techniks Inc.
(908) 788-8249 (Name & number included for your info.)

After playing around with it, I'm not all that impressed. I used a 600
dpi printer for the printing and also used a press which is used to mount
photos or laminate plastic. I thought this would be best because it was
larger than the board I was working on and would apply heat and pressure
more evenly.

I got a couple of usuable boards, but found the film can easily lift of
the board when removing the sheet. I don't think I would use it for high
freq.

What I do now is create a layout in a drawing program (I use Canvas for
the Macintosh) at 4x size and print it to a 600 dpi laser printer on plain
paper. I have a photo house (they specialize is photographing circuit
layouts) that will reduce it and supply me with a negative. I then use
Kepro's Dry film process to create the board. This gives me a much nicer
board than the Press-n-Peel process, but I cannot do plated thru holes.

My prefered method (which I have never done yet, but want to) is to
everything up to the point of getting the negative. Then send the
negative out to a board house that specializes in proto type quantity.
They would provide me with a finished board, already etched, drilled with
plated through holes, solder masked and even silk screened if I so
desired. The board quality would be much better than I could do in house,

and I could have several boards for a couple houndred dollars, my boards
are surface mount and typically not much larger than
1 - 1 1/2 sq in.

Hope this helps you out or at least pointed in the right direction.

Regards

Ken

-- _--
Kenneth Kalan PP ASEL ===_ / |
Northwestern University | ___/[__] ___/__ |
Prosthetics Research Laboratory |__ _|___|_____===/
Rehabilitation Engineering Program | \/
kgk@nwu.edu N9YIR o O

3316. Re: Where does the power go?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 15:46:30 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov10.154630.22094@ke4zv.atl.ga.us>
Source record: 115657

In article <Cyyqr5.LCt@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>
>Sub-point: you can't analyze amplifier efficiency unless you know a lot
>about what's going on in the amplifier, as you change load impedances. For
>example, you have to know that the amplifier is staying in a linear
>operating region if you want to apply any simple linear equations to find
>efficiency.

That's exactly correct. In some cases, the load impedance may cause
the transmitter to draw less power from the power supply due to the
higher than expected load line presented to the active device. Output
will decrease, and positive peaks may be clipped, but no more power
will be dissipated in the transmitter.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3317. Re: Measuring inductance using a.c. power line for 60h freq source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 15:47:35 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov10.154735.22170@ke4zv.atl.ga.us>
Source record: 115658

In article <39pavo$c6@ionews.io.org> mike@io.org (Mike Stramba) writes:
>Someone suggested to me that I could use the 60hz from the a.c power line
>to measure the inductance of an unknown coil.
>
>Needless to say, I'm wary of messing with 120 volts.
>
>Is there a safe way of doing this?

Use a stepdown transformer, and keep one hand in your pocket.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3318. Re: Measuring inductance using a.c. power line for 60h freq source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 17:39:45 UTC
From: tomb@lsid.hp.com
Message-ID: <Cz2BqA.97n@hpcvsnz.cv.hp.com>
Source record: 115666

Mike Stramba (mike@io.org) wrote:
: Someone suggested to me that I could use the 60hz from the a.c power line
: to measure the inductance of an unknown coil.

: Needless to say, I'm wary of messing with 120 volts.

: Is there a safe way of doing this?

Yes, through a small transformer. Heath and Eico used to make bridges that were excited by 60Hz. But expect this to work acceptable only for inductors that have significant reactance at 60Hz. 2.5 millihenries is under 1 ohm at 60Hz, and a 2.5 millihenry RF inductor is very likely to have more than 1 ohm DC resistance. You will have some trouble resolving the inductive part with simple home methods. It will be MUCH easier if you build up a little 10kHz oscillator... But if you are measuring reactors for use in 60/120Hz power supply applications, then the 60Hz would be appropriate excitation. Or if you are measuring 10 henry audio chokes, it should work fine. -- Be sure that you don't put so much current through the inductor that you cause it to overheat or to magnetically saturate.

3319. Re: Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 18:59:39 UTC
From: jho@xilinx.COM
Message-ID: <199411101859.AA01889@clemenza.xilinx.com>
Source record: 115659

>Date: Wed, 9 Nov 1994 16:22:07 GMT
>From: serafin@epcot.spdc.ti.com (Mike Serafin)
>Subject: Looking for Tower plans

>I am looking for plans to construct a homebrew antenna tower.
>Either that or a pointer to a reference manual that would
>contain that type of information. Please post your information
>for the benefit of others that may be interested.

>Thanks,
>Mike
>KC5GRW

I think buying a used tower will be easier than build your own since
there are safety and other issues, if $$ is your primary motivation
for this project.

Jonathan/ab6ls

3320. Re: Local TV Jammer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 19:41:17 UTC
From: jmccarty@spd.dsccc.com
Message-ID: <39tt0t$mqq@sun001.dsccc.com>
Source record: 115660

In article <VBREAULT.94Nov7084349@rinhp750.gmr.com>,
Val Breault <vbreault@rinhp750.gmr.com> wrote:
)In article <TStewart.68.2EB9A108@massey.ac.nz> T.Stewart@massey.ac.nz writes:
)
) I've got kids who occasionally get up late and watch TV when we're asleep (and
) they are suppose to be too!!).
)
) Anyone have any ideas on how to build a jammer (or modify existing equipment)
) which will interfer with stations on the VHF/UHF band. Only for 50
) meters or so of course, so as not to interfer with the neighbours.
)
) Is this simple or is the task quite complex?
)
)Terry, what you propose to do is probably illegal.(It is illegal in the
)U.S.) and rather difficult to do.

[rest about simple solution to keep kids from watching deleted]

Nah. Not illegal at all. It -is- illegal to interfere with service
(actually not illegal, but against regulations, which amounts to the
same thing). But to prevent reception on one's own receiver is hardly
interference with service. Such small transmitters fall into part 15. No
problem. Unless you interfere with the neighbor's reception. Then you
have a problem.

Mike
---
char *p="char *p=%c%s%c;main(){printf(p,34,p,34);}";main(){printf(p,34,p,34);}

3321. HF-UHF Transverter info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-10 23:33:05 UTC
From: beau@enterprise.america.com
Message-ID: <39uajh$5hm@enterprise.america.com>
Source record: 115661

I have a Kenwood TS-430S HF tranceiver. I would like information on
the X-verter output of this radio. I plan on hooking it up to a
Down East Microwave DEM432-15S Transverter. I am looking for the
output power of the Kenwood thru the x-verter port and the compatability
between the transverter and the Kenwood.

specs on the transverter:

input 1mw max @28Mhz

The transverter currently covers two segments of the 70cm band,
432-434 and 435-437Mhz. I would like to modify the the transverter
to cover 444-446Mhz instead of the 435-437Mhz sector. Any info on
this conversion would be appreciated.

I would also like any comments on the operation of this transverter by
anyone who has operated one.

_/ _/
_/ _/
_/ Internet = beau@enterprise.america.com _/
_/ VHF Packet = kd4gfy@kb4t.#dabfl.fl.usa.na _/
_/ _/
_/

3322. Re: BASIC compiler info wanted.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 05:10:22 UTC
From: radiosky@aol.com
Message-ID: <39uubu$p4d@newsbf01.news.aol.com>
Source record: 115662

In article <9408197799.AA779953011@ccmail.nimc.go.jp>,
tkomatsu@ccmail.NImc.go.JP writes:

I do not know of any BASIC compilers for these chips, however there are
numerous FREE assemblers available. I can point them out if you are
interested.

3323. NEED TUNNEL DIODES

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 05:20:14 UTC
From: radiosky@aol.com
Message-ID: <39uuue$p9k@newsbf01.news.aol.com>
Source record: 115663

I am looking for a source of tunnel diodes, even a couple for experimentation would do. They are for a detector in a radio telescope.

3324. Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 05:54:40 UTC
From: mckee@fc.hp.com
Message-ID: <39v0v0$ejo@tadpole.fc.hp.com>
Source record: 115664

I'm looking for a source for crystals. Anybody got a favorite?

73,

Bret N0MTA

3325. Re: (newbie question) Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 08:36:44 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <39vaes$1bd4@info2.rus.uni-stuttgart.de>
Source record: 115665

In article <39sar5$njk@vixen.cso.uiuc.edu>,
Andrew A Patricio <patricio@glhpx12.cen.uiuc.edu> wrote:
>Howdy,
>someone give me a good intuitive explanation as to exactly *how* a
>capacitor and inductor combination can change the effective real
>resistance of a load?
>
>
Hi!

It is just applying Ohms law, using complex numbers. May be the best
is to get a real basic physics book or electronics book and under-
stand this before going into scattiring parameters.

Hope you find something, Moritz

3326. PCB from laser print?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 13:18:00 UTC
From: alain.bourassa@inno.com
Message-ID: <1200.4298.uupcb@inno.com>
Source record: 115667

Hi guys

AG\>Yes, I have used a version of this special film, TEK200 from Meadowlake.
\>I have never been able to get really good results. I can get it to print
\>ok on my laserjets (Canon LBP-8 and HP LJ2), or using a Xerox copier. The
\>problem is transferring it to the board. No matter how clean the board, or
\>however I set the iron, it never transfers to the extent where I consider t
\>touchups to be acceptable.

I have built a few PCBs using TEK-200
The best result I have was a perfect board without any touchups
And the worst ... was almost 100% touchups

To get the best the layout design of your PBC should have extremely thin
lines
The more larger they are and you get into touchups

The problem is when you try to remove the TEK-200 sheet after you iron
the board

Where the lines are wide the toner get stick to the TEK-200 in the
inside area of the line
Specially like in a ground shield on a board or on a radio board with
maximum ground shield and wide lines

Digital circuit projects are often with very narrow line and no ground
shield at all and with those kind of boards you will get very good
result

AG\>There was quite a discussion on this topic a while back, either here or on
\>sci.electronics, and several contributors claimed to get good results. I
\>guess I must be doing something wrong.. 8-(

My best board: The DTMF tone decoder from the ARRL handbook with very
narrow and thin layout line, perfect on the first try
The worst of all time:A regulated power supply project from
Radio-Electronics, almost 100% touchup for filling the missing toner
everywhere, from June 1990 edition

Almost perfect every times: The PMP (Poor Man's Packet), 73
radio-amateur august 1991, very good results with 2 to 3 touchups to do
on every boards (I have built about 6 boards that way for a club
activity)

AG\>One other hint: etching is much faster if you use a shallow dish and blow a
\>hair dryer on it at close range. This heats the solution and agitates it
\>really well. This cuts the etch time from ~40 minutes to about 10 mins, whi

\>helps to prevent undercutting and ragged edges.

Better yet is an aquarium heater (50 to 75 watts) in a very narrow
and high etching tank where the board is install upward also a an
aquarium bubble making block connected to an aquarium air pump

The board will etch itself without any shaking in less than 10 minutes

Alain
VE2MTV
Shawinigan,PQ,Canada
(819)-539-6853

* OLX 2.2 * PMP The Perfect Man's Packet !

3327. Need info on sites with 68hc705 stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 14:59:42 UTC
From: rdewan@uhura.cc.rochester.edu
Message-ID: <1994Nov11.145942.3177@galileo.cc.rochester.edu>
Source record: 115521

I recently acquired a number of 68hc705 microcontrollers. I am looking for information on simple prototype boards, programming info etc. Are there any FTP sites with such information?

Rajiv
aa2ui (ex aa9ch)

3328. Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 15:40:31 UTC
From: jfw@ksr.com
Message-ID: <3a039f$mns@hopscotch.ksr.com>
Source record: 115518

Cecil_A_Moore@ccm.ch.intel.com writes:
>Visualize a transmitter connected to a dead short through 1,000,000 miles
>of lossless transmission line. Key down for 15 seconds. SWR is 1/1 and
>the transmitter is happy. Key up. Within seconds, the 100% reflected wave
>hits the transmitter output. What happens? If the impedance looking back
>into the transmitter is zero or infinite, all the power will be reflected
>back down the transmission line and bounce back and forth forever.

To correctly finish the story, imagine that just as that reflected wave
reaches the transmitter, a dummy load is switched into the circuit with
exactly the impedance that will be seen by the transmitter (i.e. if the
1,000,000 mile transmission line is exactly a multiple of a quarter-wave,
an open circuit; if it's a multiple of a half-wave, a short circuit; etc.).
Determine the operating point of the active element in the transmitter,
the efficiency of the transmitter at that operating point, and the dissipation
in the active element.

You'll probably find it getting awfully hot even without that incoming
reflected wave rattling around causing trouble.

3329. Re: Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 16:05:46 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov11.160546.26840@ke4zv.atl.ga.us>
Source record: 115519

In article <199411101859.AA01889@clemenza.xilinx.com> jho@xilinx.COM (Jonathan Ho) writes:
>>I am looking for plans to construct a homebrew antenna tower.
>>Either that or a pointer to a reference manual that would
>>contain that type of information. Please post your information
>>for the benefit of others that may be interested.
>
>I think buying a used tower will be easier than build your own since
>there are safety and other issues, if $$ is your primary motivation
>for this project.

Used towers can also be a safety hazard. Rohn warns against using used towers. This is more than just liability lawyer blather, and more than just a marketing ploy (though it is that too). You don't know what kind of stresses a used tower may have endured before you got it, and you don't know what hidden corrosion problems it may have. There are testing companies that can determine if the tower sections are still sound, but the cost of that testing may be more than what you save by buying the used tower. (There are ways to test tower sections yourself, and that can be viable if you're willing to shoulder the extra liability. I posted an explanation of how to do that a few months ago.)

If you are an experienced structural engineer, and if you are an ASME certified welder, you could perhaps make your own tower to a standard that would be as safe as commercial towers. But if you are the typical jackleg tinkerer, you'll likely be making an accident waiting to happen. Remember that you, or some innocent passerby, can be killed by a failing tower.

If we throw out the idea of making a climbable tower, there are plans in the ARRL Handbook for making a 40 foot wooden A frame antenna mast. Properly guyed, it's reasonably safe as long as you keep an eye out for rot and termites.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3330. Re: Need info on sites with 68hc705 stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 17:04:08 UTC
From: riyadth@boi.hp.com
Message-ID: <Cz44qx.K3F@boi.hp.com>
Source record: 115656

In article <1994Nov11.145942.3177@galileo.cc.rochester.edu> rdewan@uhura.cc.rochester.edu (Rajiv Dewan) writes:
> I recently acquired a number of 68hc705 microcontrollers. I am
> looking for information on simple prototype boards, programming
> info etc. Are there any FTP sites with such information?

I also have a collection of these parts (68hc705p3, I believe), and I'm looking for a good project to do with them. Preferrably something radio related (maybe a keyer?). Are there any designs out there I could reference for simple microcontroller projects? All ideas welcome.

-Riyadth Al-Kazily
riyadth@boi.hp.com
--
-- Riyadth Al-Kazily Hewlett-Packard Advanced LaserJet Operation --
-- riyadth@boi.hp.com (208) 396-4987 Boise, Idaho KB7YWE DoD #295 --

3331. Re: Coax as a gamma match capacitor?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 18:32:15 UTC
From: zlau@arrl.org
Message-ID: <1994Nov11.183215.10788@arrl.org>
Source record: 115520
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna

Kenneth Grimm K4XLM (grimm@alison.sbc.edu) wrote:
: difficulty here is to find fixed caps equal to the precise
: measured value of the variable cap. Instead of trying to
: put together a bunch of paralled caps I plan to use an
: appropriate length of RG8 or RG11 cable. I vaguely recall
: that is is about 25pf per foot and so I would trim the
: length until it was exactly equal to the variable cap and

A more accurate equation might be

electrical line length, theta=atan(Zo/Xc)
(open line less than 1/4 wavelength)

Zo is the characteristic impedance of the line
Xc is the capacitive reactance

Don't forget the velocity factor.
For example, 25 pF, 14.15 MHz, 6.3 degrees, 9.6 inches
of coax with 66 percent velocity factor.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3332. Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 22:12:08 UTC
From: fentem@esmlsun.gatech.edu
Message-ID: <fentem.16.0@esmlsun.gatech.edu>
Source record: 115655

I'm posting this for a friend. Please email any responses directly to her
at the address given. She is located in central Georgia. Her text
follows.

I have a list of suggested parts for building a Flame Speaker. One of the
items in particular is kind of hard to come by. I am looking for an
adjustable high voltage power supply (500volts at 300ma minimum). The author
of the experiment said that he found/used a Sorensen BB500. I am trying to
round this up to use it as a demonstration in a middle school science class,
so I don't have a lot of money to spend. If anyone knows where I can find
such an animal, please send an e-mail message to:
suzanne_mason@smtp.rc.trw.com
I only have mail access to the internet. Thanks.

+---+
David R. Fentem	david.fentem@gtri.gatech.edu
Georgia Tech Research Institute	CompuServe: 70674,3306
GTRI/ELSYS/ESMD	Voice: (404) 894-7045
Atlanta, GA 30332-0800	FAX: (404) 894-7080
+---+

3333. What is SCI.HOMEBREW?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 22:36:40 UTC
From: billb@eskimo.com
Message-ID: <Cz4K59.FFo@eskimo.com>
Source record: 115522

A new newsgroup has appeared (or is it an old one I've just now noticed?) called sci.homebrew.

So, does anyone know if this is for beer hobbyists, or for physics hobbyists? I've done both, but prefer the weird science projects!

****
William J. Beaty http://www.eskimo.com/~billb
Seattle, WA Science Projects Page
billb@eskimo.com
--
.....uuuu / oo \ uuuu.....,.....
William Beaty voice:206-781-3320 bbs:206-789-0775 cserv:71241,3623
EE/Programmer/Science exhibit designer http://www.eskimo.com/~billb/
Seattle, WA 98117 billb@eskimo.com WEIRD SCIENCE web page

3334. Mini 9V Battery Transmitter - where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-11 23:04:00 UTC
From: jim.weidner@radiowave.com
Message-ID: <89D843C.18D000019E.uuout@radiowave.com>
Source record: 115523

Ramsey Electronics (advertise in 73 mag) sells a small FM xmitter that
size with a range of about 100ft.

3335. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 03:31:37 UTC
From: gull@grex.cyberspace.ORG
Message-ID: <Pine.3.07.9411112236.B15463-a100000@grex.cyberspace.org>
Source record: 115524

I need some advice about baluns. I need a 4:1 balun for an
antenna project. The balun would have to be able to handle at least 200
watts or so, and work from 7 MHz to 30 MHz. Is it possible to homebrew a
good balun without spending much over $20, or should I buy one of those
baluns made by Van Gordon Engineering?

_ _
__ _ _ _| | | | David Brodbeck Alma, MI
/ _` | | | | | | | Amateur Packet(AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
| (_| | |_| | | | +--
__, |__,_|_|_|_| @ grex.cyberspace.org
|___/

3336. curious: No more tube transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 09:40:22 UTC
From: tjioe@sfsuvax1.sfsu.edu
Message-ID: <3a22i6$pug@news.csus.edu>
Source record: 115525

I am just wondering is there anybody still using Homebrew
tube transmitter out there ? Me and my friends used to
make 2 or 3-stages tube tranmitter to operate at 80m/3.5Mhz.

In the process and design and testing, we usually got
some close neighbors' TV to scramble :-) Maybe
it is illegal here in the US, anybody care to respond.

Thanks,
Joe

3337. Re: Quad Op Amp ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 14:51:48 UTC
From: milcom@netcom.com
Message-ID: <milcomCz5tAD.6xz@netcom.com>
Source record: 115526

In article <39cjco$1qki@usenetw1.news.prodigy.com>, DFNF67A@prodigy.com (FRANK DAMERON) says:

>Now that I have the project almost finished I cannot get it to work
>properly. I get the right test voltage and when i adjust the trimpots
>the LED idicator will not light to tell me there is a full charge. I
>checked and rechecked the wiring, solder joints, voltages and the LED.

Since its a battery charger I assume its using the LM2900 as a
comparator? That op-amp seems to work ok as a comparator but keep
in mind it is intended to be used for amplifing AC from audio thru
a couple 100khz, and best suited in an inverting configuration.
That op-amp is a norton current amplifier. The non-inverting (+)
inputs are always dropped down to the .7v diode drop. I have
sucessfully used it for DC gain but there is always 100mv residual on
the output and i cant get rid of it. the LM324 is a better choice for
DC gain, quad amp.

3338. Re: (newbie question) Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 15:40:09 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov12.154009.3403@ke4zv.atl.ga.us>
Source record: 115528

In article <39vaes$1bd4@info2.rus.uni-stuttgart.de>
moritz@ipers1.e-technik.uni-stuttgart.de () writes:
>In article <39sar5$njk@vixen.cso.uiuc.edu>,
>Andrew A Patricio <patricio@glhpx12.cen.uiuc.edu> wrote:
>>Howdy,
>>someone give me a good intuitive explanation as to exactly *how* a
>>capacitor and inductor combination can change the effective real
>>resistance of a load?
>
>It is just applying Ohms law, using complex numbers. May be the best
>is to get a real basic physics book or electronics book and under-
>stand this before going into scattiring parameters.

That's not a very helpful answer, Moritz.

Andrew, you understand how a transformer works to change impedances
via step up or step down transformations. You also understand that
a transformer can consist of one winding with taps, called an auto-
transformer. Well an L network is like an auto-transformer with
part of the coil reactance replaced by a capacitive reactance. It's
a bit more complex than that, as Moritz intimated, and circuit Q
plays a critical role in the transformation, but thinking of an
L network like an autotransformer will give you an intuitive idea
of what's happening. There are two ports, Rs and Rp, with Rs being
across both the inductor and the coil in series, and Rp being
across only one of the components, like the tap on an autotransformer.
Rs=Rp/(1+Q^2).

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3339. Re: tapping a coil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 15:41:38 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov12.154138.3571@ke4zv.atl.ga.us>
Source record: 115529

In article <caa_9411120020@blkcat.fidonet.org> Bob.Klug@f239.n109.z1.fidonet.org (Bob Klug) writes:
>I am a total novice working on my first homebrew project. As I
>mentioned in an earlier post I am building an antenna tuner for the
>random wire antenna I use with my "boatanchor" SW receiver -- a 25 year
>old Blaupunkt AM/FM/SW radio. The instructions I am following say to
>wrap magnet wire around a core, then to take taps at certain turns on
>the coil and connect the taps to a 12-position rotary switch. I know
>enough to scrape the plastic (?) covering off the magnet wire, but I
>do not know exactly what taps are. Do I solder the rotary switch
>connections directly to the coil, or do I run small pieces of wire from
>the coil to the switch? As I said, I am a total novice and I will
>appreciate any advice anybody can give me. Thanks !!

Because of physical limitations, you'll have to solder short pieces
of wire from the taps to the switch.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3340. Re: Building frequency counter with minimum # components

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 15:51:45 UTC
From: bcollett@hamilton.edu
Message-ID: <bcollett-1211941051450001@150.209.16.8>
Source record: 115532

In article <39j1b3$n2l@ionews.io.org>, mike@io.org (Michael Stramba) wrote:

> I want to build a frequency counter to cover from d.c. (or ~ 100-200 khz) to
> an upper limit of at least 30 mHz, (and possibly higher 500 mHz, 1 gHz,
> depending on parts cost/availability, complexity), using the minimum # of
> components.
>
> Can anyone suggest IC #'s ?
>
Harris-Intersil makes several such beasties. I would suggest either the
ICM7216 or the ICM7226 which, with an oscillator such as the 7207, will
make a multi-function function frequency counter in only a couple of
chips. TYou may need a faster front-end divider to get the upper frequency
end. Jameco used to sell these things complete with evaluation kits that
are essentially full instruments with a case.
--
Brian Collett, Physics Dept. Hamilton College, Clinton, NY

3341. Re: (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 16:37:41 UTC
From: rkm@vectorbd.com
Message-ID: <Cz5y6t.8Ho@vectorbd.com>
Source record: 115540

David Brodbeck (gull@grex.cyberspace.ORG) wrote:
: I need some advice about baluns. I need a 4:1 balun for an
: antenna project. The balun would have to be able to handle at least 200
: watts or so, and work from 7 MHz to 30 MHz. Is it possible to homebrew a
: good balun without spending much over $20, or should I buy one of those
: baluns made by Van Gordon Engineering?

You can purchase W2AU and W2DU baluns from RadioWare much cheaper than
from Van Gorden. (About $25.00, if I remember correctly.)

- Rich

3342. Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 17:42:37 UTC
From: Brad Herring <herring@nps.navy.mil>
Message-ID: <3a2uqd$l6m@nps.navy.mil>
Source record: 115534

Hello All,
I am looking for a company's address and phone number. The
company sells linear amps. I have a list here of various amps but
the only problem is that somebody marked out the address and phone
number. The only thing I have is a Bear eating a fish. I hope this
is the companys logo. So if you have any informaiton or seen a bear
eating fish on any cataloges please e-mail me. Any information will
be greatly appreciated, E-mail to: herring@nps.navy.mil

Thanks in Advance
Brad

3343. Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-12 17:46:15 UTC
From: Brad Herring <herring@nps.navy.mil>
Message-ID: <3a2v17$l7d@nps.navy.mil>
Source record: 115535

Hello All,
I am looking for a company's address and phone number. The
company sells linear amps. I have a list here of various amps but
the only problem is that somebody marked out the address and phone
number. The only thing I have is a Bear eating a fish. I hope this
is the companys logo. So if you have any informaiton or seen a bear
eating fish on any cataloges please e-mail me. Any information will
be greatly appreciated, E-mail to: herring@nps.navy.mil

Thanks in Advance
Brad

3344. NEEDED!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 00:31:21 UTC
From: wroach@netcom.com
Message-ID: <wroachCz6K49.CFv@netcom.com>
Source record: 115537

[No readable article body recovered]

3345. 2C39 BA / 7289 tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 00:34:22 UTC
From: f5jtl@unm.edu
Message-ID: <3a3mue$hnp@hydra.unm.edu>
Source record: 115530
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

A friend of mine is looking for 2C39 BA / 7289 tubes (new or used). He's looking for an address where he could buy them. These tubes are for SHF as I understand.
If u have any info please send it to:

f5jtl@unm.edu

3346. Re: PC BRDS XY RESIST INK?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 01:03:52 UTC
From: bills@inqmind.bison.mb.ca
Message-ID: <6gFPVc1w165w@inqmind.bison.mb.ca>
Source record: 115553

mzenier@netcom.com (Mark Zenier) writes:

> Tom Alldread (tom.alldread@kbsbbs.com) wrote:
> : I have heard that there is a resist ink available for X/Y pen
> : plotters that one can use with an appropriate CAD program to draw a
> : circuit pattern directly onto bare board stock. My understanding is that
> : the resulting board can then be etched directly without any intermediate
> : processing steps.
>
> There was a lot of discussion of this in sci.electronics about a year ago.
> Here's the parts I remember. Sorry I can't give credit to those
> knowledgeable.
>
> The recommended ink was Staedtler permanent red. The problem is that
> it's not longer imported as a liquid ink because the market was too
> small to justify the cost of compliance with the hazardous chemical
> laws and regulations. You can get marking pens with the ink already
> in them, just not the liquid ink for use in reinkable plotter pens.
>
> One of the pens I bought as a result of the discussion was a
> Staedtler Lumocolor 313. (Havn't got around to using it yet. ;-( )
>
> Mark Zenier mzenier@netcom.com mzenier@eskimo.com
>

I have used Staedtler catalog number 485 23SAR-9 permanent black
ink sucessfully as a resist for making PC boards. If you can't
get it at a local Staedtler dealer, perhaps you can special-order it
from a Canadian outlet; I had no trouble getting delivery on this from
my local dealers.

Bill

bills@inqmind.bison.mb.ca-
The Inquiring Mind BBS, Winnipeg, Manitoba 204 668-8845

3347. tower dimensions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 02:46:05 UTC
From: ldheiss@ualr.edu
Message-ID: <1994Nov12.204605.1@ualr.edu>
Source record: 115531

If anyone knows the width of the side of a triangular tower please post. We are designing supports for a pushup pole but may install a tower at a later date and don't want to have to redo the mounts. The mounts will be in a corner at the top of a uninversity building (ie college) and the red tape to get new mounts installed would be chalanging.
Thanks
Larry
--
****
Larry Heiss
University of Arkansas @ Little Rock
Laser Applications Lab
e-mail ldheiss@athena.ualr.edu
call: KC5CVL
****

3348. (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 06:35:38 UTC
From: ham-tech@n0kbd-65.ampr.ORG
Message-ID: <6187@n0kbd-65.ampr.org>
Source record: 115536

```
subscribe ham-tech@n0kbd-65.ampr.org
```

3349. Re: PC Switching Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 14:00:03 UTC
From: nprjr@aol.com
Message-ID: <3a5653$3mf@newsbf01.news.aol.com>
Source record: 115538

In article <1994Nov7.154437.15259@rogue.com>, dshalita@rogue.com (David Shalita) writes:

Are there any reasons why it is NOT advisable to use these switchers?
I recall from past discussions, but cannot remember details,
1. Need for preloads on plus 5v
2. Concerns about noise
3. Continous real current capacity of the +12v supply
when the other supplies are unloaded.

Dave,

If the switchers are fairly new I would imagine that the noise problem will be minimal. However, a quick check of the output tank (the LC circuit before the output) will reveal the cutoff frequency of the amp. This should be low...<5kHz.
If the components are in good shape, noise should be minimal. Note that noise reduction can be improved by additional LC filters on output..BUT this affects the ability of the control circuits to operate properly!!!! BE CAREFUL!

Yes, all SMPS's need a minimum load. If you want to calculate the minimum load just drop me an e-mail and I'll go thru the procedure with you off-line.

Finally, cross-regulation is an issue to be concerned with.

A good reference:
Practical Switching Power Supplies
Marty Brown, Motorola SPS tech., Tucson, AZ.

Its available at most tech bookstores.

GOOD LUCK,
Nick KB3YL

3350. coils, coils, coils

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 15:09:03 UTC
From: af045@DAYTON.WRIGHT.EDU
Message-ID: <9411131509.AA13330@dayton.wright.edu>
Source record: 115533

Hi Gang,

I'm looking for a little help. I was searching one of my local surplus stores and came upon some IF transformers and coils. They were cheep (a quarter a piece) so I bought a few. There are markings on the cans, but I have no reference for them. I'm hoping someone out there can help me identify my find. All of the cans say TOKO RCL along the top. The numbers are:

Core color Marking
Yellow 5015 014
Blue A29 5315
Green OA-011 6215
Green OA-011 77465
Black 154AN 7 A 6783 H K 8133
Black 113KN T1085 H K 89448

What I'm looking for is the usual info like Q, freq, impedence. That sort of thing.

Thanks in advance.

Dan, WD8AAU (af045@dayton.wright.edu)

3351. Re: Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 20:35:47 UTC
From: faunt@netcom15.netcom.com
Message-ID: <FAUNT.94Nov13123547@netcom15.netcom.com>
Source record: 115539

Dave Gingery, well known in home machinist circles, has a booklet on
building a 35' free standing tilt-over antenna tower.
The address for him on the book is David J. Gingery, PO Box 9123,
Springfield MO 65801-9123.
His call seems to be KB0EBU, btw.
73, doug

3352. Local TV Jammer....Thanks for the replies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-13 22:50:14 UTC
From: T.Stewart@massey.ac.nz
Message-ID: <TStewart.70.2EC69826@massey.ac.nz>
Source record: 115541

Thanks to all those who replied privately (and publicly) to this post...

Most postings talked of adding timers, removing the cord, locking up the TV's etc. Most mentioned the legality (or illegality!) of the activity being discussed along with a few letters touching on the merits of disciplining children.

No-one has yet given any hints on how to build such a device.

Perhaps I need to elaborate here.....The children concerned are actually teenagers, aged 13 and 18. I'm not concerned about the 18 year old....who only stays with us occasionally anyway.

The 13 year old, Adam, is a different matter. His mother is my second wife and Adam's father always allowed the boy to stay up as long as he likes on Friday and Saturday night. He considers it his right to do so. The trouble is, he's an insomniac and will stay up until 5am, or get up and watch TV after we've gone to bed. During school days, he's pretty good and will go to bed about 9.30-10.00 or so. Unfortunately, having two late nights on the weekend alters his body clock somewhat so that Monday and Tuesday mornings sees him half asleep until lunchtime. It's especially bad in vacation time where he spends most of the time during the day asleep and most of the time at night watching television.

It can't be good for him and no amount of persuasion seems to work. Being a stepfather, I don't want to get too heavy with him...we have a good relationship and he's a very good kid in all respects except for this.

Anyway, a few months ago, I put a time switch in the T.V. (as a few replies had suggested). This worked for a while, until he took the back off the TV and discovered it. Now he can adjust it and watch TV without me knowing!!

Putting a timer on the electrical outlet would not work...we have lots of these in every room. Other people suggested locking up the TV sets when we go to bed. Trouble is we have three TV sets scattered around our house. Also, we don't mind him watching it until 12 or so, which is usually an hour or two after we go to bed.

The nearest neighbour is about 150
meters away. What I had in mind was a very low-power device which could interfer at 20 meters or so but no more. I'd put a timer on it, so it switched on at say 12.30 and off at 6am. As it would be only affecting my television, I don't think such a device would be illegal.

Also, it would be quite fun to build!

Any ideas? I'm familiar with the circuitry of low-power FM microphones
which operate from 80Mhz to 110Mhz. Can these be amended to do the job?

Cheers

Terry

****
* Terry Stewart *
* Department of Plant Science *
* Massey University *
* Palmerston North *
* New Zealand *
* *
* T.Stewart@massey.ac.nz *
****

3353. Local TV Jammer....How about just one channel?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 02:43:21 UTC
From: T.Stewart@massey.ac.nz
Message-ID: <TStewart.71.2EC6CEC9@massey.ac.nz>
Source record: 115547

(Ducking flames about neighbourhood pollution etc...)

O.K. O.K....someone has pointed out good technical reasons as to why a broad-bandwidth jammer is rather antisocial, and would be difficult to confine to the house.

Where we live, we only have 3 TV channels. Of these, two close down before 2am. Only one goes through into the small hours. How feasible would it be to build or amend a small low powered transmitter which sent a carrier wave on just this chanell (it's somewhere in the VHF band...I'm not sure exactly where yet). Could the power be kept low enough to give a lousy picture on our sets but not affect the neighbours?

Cheers

Terry

****
* Terry Stewart *
* Department of Plant Science *
* Massey University *
* Palmerston North *
* New Zealand *
* *
* T.Stewart@massey.ac.nz *
****

3354. Re: Local TV Jammer....Thanks for the replies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 03:01:07 UTC
From: damocles@brown.edu
Message-ID: <damocles-131194220223@poncho-slip9.cis.brown.edu>
Source record: 115548

In article <TStewart.70.2EC69826@massey.ac.nz>, T.Stewart@massey.ac.nz
wrote:

> Anyway, a few months ago, I put a time switch in the T.V. (as a few replies
> had suggested). This worked for a while, until he took the back off the TV
> and discovered it. Now he can adjust it and watch TV without me knowing!!
>
> Putting a timer on the electrical outlet would not work...we have lots of
> these in every room. Other people suggested locking up the TV sets when we go
> to bed. Trouble is we have three TV sets scattered around our house. Also,
> we don't mind him watching it until 12 or so, which is usually an hour or two
> after we go to bed.

One thing that occurs to me are those little X10 outlets. Just make sure
the controller is in your posession and that it disables all the outlets in
the room at a certain time. That ought to put a stop to his TV watching.

--
== Tony Pelliccio, KD1NR, VE ARRL/W5YI Tel. (401) 863-1880
== Brown University ADIR-DCS Fax. (401) 863-2269
== Box 1908, Providence, RI 02912

3355. Re: (none)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 09:39:48 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3a7b94$2j2s@info2.rus.uni-stuttgart.de>
Source record: 115542

David Brodbeck <gull@grex.cyberspace.ORG> wrote:
> I need some advice about baluns. I need a 4:1 balun for an

Dave, get an iron powder core from Amidon Associates.
The T200-2 (red colour coding, OD 2") will handle up to 1KW
and will cost something like 10$. It says in the ARRL handbook
how to wind it.

Good luck, Moritz DL5UH

3356. Re: Local TV Jammer....Thanks for the replies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 10:42:10 UTC
From: chuck62@freenet3.scri.fsu.edu
Message-ID: <3a7eu2$pc3@freenet3.scri.fsu.edu>
Source record: 115545

T.Stewart@massey.ac.nz wrote:
: Most postings talked of adding timers, removing the cord, locking up the TV's
<SNIP>
: Putting a timer on the electrical outlet would not work...
<SNIP>
: we don't mind him watching it until 12 or so, which is usually an hour or two
: after we go to bed.
: **********
You got any appliances (motors, flouresent lights, etc.) that cause
interference over the electrical line? Hook THAT to a timer to come on at
bed-time. Shouldn't bother the neighbors either.
...73's...chuck...KE4QPU...

3357. Coupling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 11:53:54 UTC
From: jmaas@aston.baan.nl
Message-ID: <Cz9ADu.E57@baan.nl>
Source record: 115543

Hello All,

I want to make a mixer for the following signals:

```
------
(IN) 134.5 MC -------| X | ---- 0.5 - 2.5Mc (OUT)
------
|
|
```

(IN) 135-137 MC

The mixer is a SO42P.

Is there somebody with an idea to get these frequencies out of the mixer.

I hope there is someone, Thanks in advance

73 the Johan PE1OHV

3358. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 12:40:02 UTC
From: jimn0oct@aol.com
Message-ID: <3a7lr2$iro@newsbf01.news.aol.com>
Source record: 115544

In article <fentem.16.0@esmlsun.gatech.edu>, fentem@esmlsun.gatech.edu
(David R. Fentem) writes:

I have a list of suggested parts for building a Flame Speaker. One of the
items in particular is kind of hard to come by. I am looking for an
adjustable high voltage power supply (500volts at 300ma minimum). The
author
of the experiment said that he found/used a Sorensen BB500. I am trying
to
round this up to use it as a demonstration in a middle school science
class,
so I don't have a lot of money to spend. If anyone knows where I can find
such an animal, please send an e-mail message to:
suzanne_mason@smtp.rc.trw.com
I only have mail access to the internet. Thanks.

+---+
David R. Fentem	david.fentem@gtri.gatech.edu
Georgia Tech Research Institute	CompuServe: 70674,3306
GTRI/ELSYS/ESMD	Voice: (404) 894-7045
Atlanta, GA 30332-0800	FAX: (404) 894-7080
+---+

Padon my ignorance. What in blazes (no pun intended) is a flame
speaker??

jim n0oct

3359. Grid Dip meter, part 2:Coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 14:22:38 UTC
From: richer@cambridge.village.com
Message-ID: <3a7rre$rjk@cambridge.village.com>
Source record: 115546

He3llo agin from Chez Packrat...

Well, I found a grid dip meter this weekend, a Heath GD1A for
the princely sum of $3.00 at a local flea market. What there is of it
works well, and will work even better when I shoot the tube in it
and install a MOSFET in its place... but I have 1 problem.

I did not get any coils with the beast, and Heath wasn't nice enough
to include coil data in the manual (which came with it!).

The tank circuit on this beast is a coil working into a split
variable cap, which then feeds the grid and plate of the tube through 2
silver-mica caps. I figure that the tunable looks between 60 and 100Pf, but
I'm just not up to being able to calculate the coil windings on this.

I appeal to the majority here.

Al Richer - alan_richer@crd.lotus.com

3360. Radio Shack Pro2020 Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 14:38:12 UTC
From: aankrom@crow.ucs.indiana.edu
Message-ID: <Cz9Hzp.ED9@usenet.ucs.indiana.edu>
Source record: 115552

Recently purchased an old scanner (The abovemodel...). I thought it was
an OK bargain @ $20.00 even though the store clerk assured me that it DIDN'T
work. I thought the fix would probably be something simple, but when
I opened it up it looked like a brick had fallen on the antenna (which
wasn't with the unit) and had smashed the PC board. Well I shouldn't say
samshed - A chucnk of the board was broken away, but it was only the part
that held the antenna and some of the ground (not really a ground PLANE...).
I thought a little PC board surgery might do the trick since it appeared
that most of the parts hadn't been misaligned too much. I scraped away
the "Green Stuff" and put a nice, neat glob of solder to reconnect each
trace. Most of the breaks were hairline, so I thought that this should
work fine. NOW the PROBLEM _seems_ to have nothing to do with the board
damage - The keyboard will take entries whenever it FEELS like it. It
acts sort of brain-dead. This part of the unit is on the opposite side as
the antenna on a completely separate board. (I'm assuming one board
is for computer control and the other part is the actual radio...)
I'm sort of flying blind since the manual didn't come with it.
I was also wondering what possibilities there are for filling in the
gaps in its range (provided I can get the unit WORKING!). And no I'm not
expecting to get cellular or anything like that. It has a top end of
512 MHz and I don't expect it to go much HIGHER than that...

Actually ANY input at all on this particular unit would be helpfull.

Thanks,

Anthony Ankrom

--
After I zoquo I like to ushnuu..

3361. Wanted: Service Man. Kenwood R5000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 15:06:24 UTC
From: cmundy@blkbox.com
Message-ID: <3a7udg$2k1@news.blkbox.com>
Source record: 115551

If you have access to a service manual for the Kenwood R-5000, I would be happy to pay a reasonable price for a copy of it (you define reasonable). I want to do a little home-brewing with my unit - brave (or foolish) soul that I am! Thanks!

3362. What is this tube?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 15:16:53 UTC
From: mack@mails.imed.COM
Message-ID: <9410147848.AA784833924@mails.imed.com>
Source record: 115556

I purchased a couple of power amps for the old business band at 450 MHz over the weekend. They use a GE 6897 tube (or is it 6987 I forget). It is a triode of the 2c39 type. Of course I could just ASSUME that it is a 2c39, but I would like to know how GE expected the tube to be used.

Does anyone have a small list of the parameters for this tube?

Ray Mack
WD5IFS
mack@mails.imed.com

3363. Re: Radio Shack Pro2020 Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 17:00:17 UTC
From: richer@cambridge.village.com
Message-ID: <3a8531$t4k@cambridge.village.com>
Source record: 115554

Re: Scanner keypad woes:

Personally, i'd pull the keypad apart and clean the circuit board underneath. Ofttimes with these small keypads, the graphite buttons under the rubber keypad tops flake and deposit carbon across the conductors, rendering one of the keys "forever on". Cleaning up the board and the back of the key molding usually does it right up.

If not that, grab a meter and start checking for broken wires to the keyswitches. What you're describing sounds like some kind of intermittent between the keyboard and Uprocessor.

If the beast got walloped with something, also check for intermittents between the boards. I fixed a Nokia audio amp that way once...the power line traces had cracked, leaving a perfectly functional tuner with no back end.

Good luck - alan_richer@crd.lotus.com

3364. Re: Local TV Jammer....Thanks for the replies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 17:20:38 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3a8696$1rfh@info2.rus.uni-stuttgart.de>
Source record: 115555

Terry,

What makes you think, that he would not find any conceivable jamming
device? I would be dissapointed of my son if he did not.

I think you should shift this thread to soc.education. or thereabouts.

good luck, Moritz DL5UH

3365. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 18:56:12 UTC
From: fentem@esmun.gtri.gatech.edu
Message-ID: <fentem.17.0@esmun.gtri.gatech.edu>
Source record: 115557

>Padon my ignorance. What in blazes (no pun intended) is a flame
>speaker??

I've only heard about it, and have never actually seen (heard) one. From what I gather, the gist of it is to modulate a flame with a relatively high audio voltage (with a dc bias?), and that the flame functions as some sort of transducer.

That's about the sum total of my knowledge on the subject.

Suzanne (the one seeking the info) found an article someone had written about it, and wants to demo it in a middle school science class.

+---+
David R. Fentem	david.fentem@gtri.gatech.edu
Georgia Tech Research Institute	CompuServe: 70674,3306
GTRI/ELSYS/ESMD	Voice: (404) 894-7045
Atlanta, GA 30332-0800	FAX: (404) 894-7080
+---+

3366. GEC Super radio III mods #1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 20:54:12 UTC
From: oddjob@cix.compulink.co.uk
Message-ID: <Cz9zED.ADz@cix.compulink.co.uk>
Source record: 115558

Is there any mod for this radio to cover Shortwave bands, add a BFO, loop antenna, attenuator etc?

oddjob@cix.compulink.co.uk

3367. Re: tapping a coil

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 21:52:40 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <784849960snz@lfheller.demon.co.uk>
Source record: 115560

In article <caa_9411120020@blkcat.fidonet.org>
Bob.Klug@f239.n109.z1.fidonet.org "Bob Klug" writes:

> I am a total novice working on my first homebrew project. As I
> mentioned in an earlier post I am building an antenna tuner for the
> random wire antenna I use with my "boatanchor" SW receiver -- a 25 year
> old Blaupunkt AM/FM/SW radio. The instructions I am following say to
> wrap magnet wire around a core, then to take taps at certain turns on
> the coil and connect the taps to a 12-position rotary switch. I know
> enough to scrape the plastic (?) covering off the magnet wire, but I
> do not know exactly what taps are. Do I solder the rotary switch
> connections directly to the coil, or do I run small pieces of wire from
> the coil to the switch? As I said, I am a total novice and I will
> appreciate any advice anybody can give me. Thanks !!

If you are using enamelled Cu wire, just twist together little loops
of wire as you are winding the coil, like little pigtails, half an inch
or so long. You can then scrape the coating off, tin them, and then
join them to the switch contacts with short lengths of wire.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3368. service manual

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-14 23:26:42 UTC
From: ac316@yfn.ysu.edu
Message-ID: <3a8rni$eka@news.ysu.edu>
Source record: 115559

HI...WOULD ANYONE POSSIBLY HAVE A SCHEMATIC AND OR SERVICE
MANUAL FOR A BOUNTY HUNTER METAL DETECTOR MODEL VLF 840..I'VE
HAD IT FOR QUITE A FEW YEARS AND REALLY ENJOYED USING IT..
ANY HELP WILL BE APPRECIATED...THANK YOU...TOM..ac316@yfn.ysu.edu
--
;;
q

3369. Re: Wanted: Service Man. Kenwood R5000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 00:10:47 UTC
From: frederick.mckenzie-1@kmail.ksc.nasa.gov
Message-ID: <frederick.mckenzie-1-1411941910470001@k4dii.ksc.nasa.gov>
Source record: 115561

In article <3a7udg$2k1@news.blkbox.com>, cmundy@blkbox.com (Claude Mundy) wrote:
> If you have access to a service manual for the Kenwood R-5000, I would be
> happy to pay a reasonable price for a copy of it

Claude-

If all else fails, try Kenwood Parts, at (800)637-0388. I was given this number for manuals, but I've never called it.

73, Fred, K4DII

3370. Re: Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 02:05:05 UTC
From: nprjr@aol.com
Message-ID: <3a950h$sr0@newsbf01.news.aol.com>
Source record: 115563

In article <39v0v0$ejo@tadpole.fc.hp.com>, mckee@fc.hp.com (Bret McKee)
writes:

I'm looking for a source for crystals. Anybody got a favorite?

Bret,

Try C-W crystals. They've got a good selection of used stuff. They're
located in MO, and always advertise in QST. The address that I've got is:

C-W Crystals
Marshfield, MO 65706

That's directly out of QST, but I'm not sure if that's a partial address
or what.
You could also try either JAN Crystals in Florida, or ICM in Oklahoma.
They're both commercial houses that manufacture new mounts. They're a
whole lot more expensive, but worth the money if the app is for a
commercial piece of gear. If your just homebrewing C-W is probably your
best bet (economically speaking)!

GOOD LUCK

Nick KB3YL

3371. Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 02:20:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.49.546@acenet.com>
Source record: 115571

BM>Newsgroups: rec.radio.amateur.homebrew
BM>Organization: Hewlett-Packard Fort Collins Site

BM>I'm looking for a source for crystals. Anybody got a favorite?

Hi Bret - try these:

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Crystek Crystals 800-237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

International Crystal Mfg Co. 405-236-3741
10 North Lee Street Crystals!
Oklahoma City, OK 73102

ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825
P.O. Box 26330: 701 W. Sheridan
Oklahoma City OK 73126-0330

JAN Crystals 800-526-9825: 813-936-2397
P.O. Box 06017: 2341 Crystal Drive: Crystals
Ft. Myers, FL 33906-6017

Ryan Communications 412-368-3859
BOX 111E Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

I hope that helps you!

Corrections, additions to:

Brian Carling
18016 Fertile Meadow Ct.
Gaithersburg, MD 20877

FIDO Netmail - 1:109/423
Familynet ---- 8:7002/25
Phileonet ---- 777:100/14
MJCN --------- 8:7002/25
Internet ----- Brian.Carling@acenet.com

Packet ------ AF4K @ W3INK.#MD.USA.NA

Reply here or call (301) 990-6070 BEFORE 10 pm EDST

3372. 2C39 BA / 7289 tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 02:21:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.50.546@acenet.com>
Source record: 115572

FAW>rec.radio.amateur.misc

FAW>A friend of mine is looking for 2C39 BA / 7289 tubes (new or used). He's
FAW>looking for an address where he could buy them. These tubes are for SHF
FAW>as I understand.

Try these sources:

Adkins:Charles P. N8QXP 313-382-0272
1821 La Blanc. Tubes
Lincoln Park,MI 48146

Allied Electronics: 800-433-5700 Located in 36 states, 83 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes. Min.Prepaid
order $25. Min. Credit Card order $50 as well as COD is $50. Min.

Antique Audio 512-467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits

Antique Electronic Supply Co. 602-820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

A.R.S. 602-820-5411
Arizona Need address Tubes

Bauman:Jeff, WB5KZW. 313-435-9922: 313-661-0202 Jeff had 1500 Tubes
6647 Stonebridge East, for sale as of December,1993
West Bloomfield, MI 48322

Cable:John, 619-258-7931
Address needed. Tubes from 1941 to 1960, new.

CeCo Communications. 800-221-0860: 212-646-6300
2115 Avenue X Vacuum tubes
Brooklyn, NY 11235

C & N Electronics 800-421-9397: 612-429-9397
6104 Egg Lake Road FAX 612-429-0292
Hugo, MN 55038 Buy & sell tubes

Daily Electronics 800-346-6667: 206-896-8856: FAX 206-896-5476
10914 N.E. 39th Street
Vancouver, WA 98682 Tubes, all types.

Davilyn Corp. 800-235-6222 xct.CA: 818-787-3334 CA: FAX 818-787-4732
13406 Saticoy St. Electronic Tubes. Good Prices, Call for Catalog
North Hollywood, CA 91605-3475 Also Surplus Electronic Gear.

DH Distributors 316-684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Electron Tube Enterprises 802-879-0611
Box 311
Essex, VT 05451 Tubes

Electronic Bits 'N Pieces 303-361-6530
P.O. Box 31654
Aurora, CO 80041 Tubes, transistors, diodes, chips

Fair Radio Sales. 419-227-6573:419-223-2196: FAX 419-227-1313
1016 E. Eureka Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send S.A.S.E.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

International Components Corp.800-325-0101: FAX 503-336-4400
1803 NW Lincoln Way Cabinets, components & vacuum tubes
Toledo, OR 97391

Jolida Tube Factory 800-783-2555
10820 Guilford Road Vacuum tubes
Annapolis Junction, MD 20701

Kirby No number listed
298 W. Carmel Drive Tubes, new up to 90% off
Carmel, IN 46032

New Sensor Corp. 800-633-5477: 212-529-0466: FAX 212-529-0486
133 Fifth Avenue. Vacuum tubes galore! Call for list.Min.Order $50.
New York, NY 10003 Std. test= $0.75/Tube. Premium Match $2/Tube

P.E.M. Tubes 916-383-9107
7392 French Road Tubes, radio, TV, transmitting, CRT
Sacramento, CA 95828

Pride Tubes 800-638-3925: 205-650-5522: FAX 205-880-8077
8200 South Memorial Parkway 100% RF Tested Tubes
Huntsville, AL. 35802 Competitive prices.

Rauchwerger, Lawrence 217-352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

R.F Parts. To Order 800-737-2787:619-744-0700 or 0750 for Tech info
1320 Grand Avenue FAX 619-744-1943
San Marcos, CA 92069 Diamond Antennas, RF Power Transistors & Tubes.

Steinmetz Electronics 219-931-9316
7519 Maplewood Avenue Tubes
Hammond, IN 46324

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Unity Electronics No number listed
P.O. Box 213 Vacuum tubes
Elizabeth, NJ 07206

I hope that helps your friend!

73 from AF4K

Additions? Corrections?

Brian Carling
18016 Fertile Meadow Ct.
Gaithersburg, MD 20877

FIDO Netmail - 1:109/423
Familynet ---- 8:7002/25
Phileonet ---- 777:100/14
MJCN --------- 8:7002/25
Internet ----- Brian.Carling@acenet.com
Packet ------ AF4K @ W3INK.#MD.USA.NA

Reply here or call (301) 990-6070 BEFORE 10 pm EDST

• SLMR 2.1a • Despair: an extra tire in da trunk!

3373. Looking for 1.5V rechargeable AA's

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 03:38:26 UTC
From: asirene@ntuvax.ntu.ac.sg
Message-ID: <1994Nov15.113826.1@ntuvax.ntu.ac.sg>
Source record: 115549
Cross-posted to: rec.radio.amateur.equipment,sci.electronics,rec.radio.amateur.homebrew

Does anyone make 1.5V rechargeable AA cells? What current rating?
How can I contact them? Thanks.

3374. Re: curious: No more tube transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 04:47:18 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <CzALAu.8H7@news.Hawaii.Edu>
Source record: 115564

tjioe@sfsuvax1.sfsu.edu (Joe Chitrady) writes:

>I am just wondering is there anybody still using Homebrew
>tube transmitter out there ? Me and my friends used to
>make 2 or 3-stages tube tranmitter to operate at 80m/3.5Mhz.
>
>In the process and design and testing, we usually got
>some close neighbors' TV to scramble :-) Maybe
>it is illegal here in the US, anybody care to respond.

There's an email newsgroup that you might be interested in: Boatanchors;
it's dedicated to tube radios (ham, commercial, military). The list
manager has been away for quite some time so no one can subscribe
or unsub, BUT there is a daily digest of articles available via
ftp:

ftp sunsite.unc.edu
login: anonymous
password: <your address>
cd pub/academic/agriculture/agronomy then:
get DAILY.BA and after the file is transfered:
quit

and waiting in your home directory will be a file titled DAILY.BA.

If you wish to post an article to the Boatanchors group please
email me for the address.

Jeff NH6IL

3375. More confusing stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 05:41:08 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <3a9hlk$fap@chnews.intel.com>
Source record: 115550

Here's an interesting set of measurements. IC-745 on 10m, MFJ-949 SWR meter, quarter-wave of RG-8X on 10m. With a 50 ohm dummy load the SWR is 1:1. With a 25 ohm dummy load the SWR is 1.2:1. With a 100 ohm dummy load the SWR is 1.7:1. All three measurements were with 10w output. Why don't I see an SWR of 2:1 on the unmatched loads?
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3376. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 11:10:04 UTC
From: p.tyers@trl.oz.au
Message-ID: <p.tyers.569.008D5DC8@trl.oz.au>
Source record: 115562

In article <fentem.17.0@esmun.gtri.gatech.edu> fentem@esmun.gtri.gatech.edu (David R. Fentem) writes:
>From: fentem@esmun.gtri.gatech.edu (David R. Fentem)
>Subject: Re: Flame Speaker Project
>Date: 14 Nov 1994 18:56:12 GMT

>>Padon my ignorance. What in blazes (no pun intended) is a flame
>>speaker??

Wireless World (or Wireless World & Electronics, I can't remember when it transmogrified) wrote them up in the early 1980's. Just the thing for cold winter evenings in the UK! Supposedly had remarkable response but for reasonable bass response had to have a VERY long flame, the gas bill might be interesting.

P Tyers, Tel. +61-(0)3-2536794 JANET: p.tyers%trl.oz.au@uk.ac.ucl.cs
ACSnet: p.tyers@trl.oz UUCP:{uunet,hplabs,ukc}!munnari!trl.oz.au!p.tyers
CSnet: p.tyers@trl.oz.au ARPAnet: p.tyers%trl.oz.au@uunet.uu.net HAM: VK3KTS
MAIL: Telecom Research Laboratories,P.O. Box 249,Clayton,VICTORIA 3168,AUSTRALIA

3377. Re: PC Switching Power Supply

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 12:20:18 UTC
From: peter@Thoth.st.3Com.com
Message-ID: <3272@bridge2.NSD.3Com.COM>
Source record: 115568

Just a data point for y'all. I have been using one of these supplies, for
the past 5 years, to run a Northern Telecom Displayphone (terminal/telephone)
and a Heath HW-2036A 2-meter radio. No complaints, no problems.

73,
Peter

Peter Simpson, KA1AXY Linux! Peter_Simpson@3com.com
3Com Corporation The free Unix (508) 836-1719 voice
Northborough, MA 01532 for the 386 (508) 393-6934 fax

I speak only for myself, 3Com doesn't pay me to speak for them, so I don't.

3378. Re: Mini 9V Battery Transmitter - where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 16:17:34 UTC
From: vanwag@netcom.com
Message-ID: <vanwagCzBH9A.J09@netcom.com>
Source record: 115566

Look in the latest QST (Nov.). They have a construction project for a 9
volt powered QRP transciever for 40 and 80 meters.

73, DE KE6EPC

Dominic C. Mercado (dmercado@kaiwan.com) wrote:
: I'm looking for a source to make a mini transmitter about the
: size of a 9V battery. Does any one have any plans or where I
: can buy one?

: Thanks and 73,
: Dominic Mercado, dmercado@kaiwan.com

--
vanwag@netcom.com

3379. Re: PC BRDS XY RESIST IN

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 18:02:29 UTC
From: hbrown@nadir.resd
Message-ID: <1994Nov15.180229.291@knight.vf.ge.com>
Source record: 115567

Tom,
I can't give you an address at this time, but there's a guy in northern Virginia that I have seen at hamfests and computer shows for the last 2 years that sells used HP inkjets and HP XY plotters. I saw him at Gaithersburg hamfest last Sept. Prices were around 150 or so if my memory is correct. You might check in Nuts and Volts.

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3380. Qualcomm Direct Digital Synthesizer Chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 19:14:26 UTC
From: morinv@nbnet.nb.ca
Message-ID: <941115151426.487312@news.nbnet.nb.ca>
Source record: 115583

I've just *fried* my Qualcomm Q2220 DDS chip that I use in a hybrid phase-locked loop system that generates an LO signal to my up-converting receiver.

Can anyone help me find a distributor that sells in quantity one?

Vic VE9ABC

3381. Converting a Modem into a TNC - Is it possible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-15 22:02:29 UTC
From: Alex Nemeth <amn1@cornell.edu>
Message-ID: <3abb5l$7m4@newsstand.cit.cornell.edu>
Source record: 115565
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.equipment

I heard that there might be a schematic floating around that will allow you to convert a modem into a TNC. Does such a thing exist? I'm just starting to get into Packet and I'm about to come into about 6 Hayes 1200 Bd Modems (internal) , and a couple of 2400 modems. and this would be an interesting project to work on, not to mention saving me much $$.

If there's any good reference material on this subject could someone point the way?

Thanks

Alex

** Alex Nemeth : Senior MicroComputer Specialist
** amn1@cornell.edu : AutoCad Technicial Specialist
** N2YEL (147.180 +) : College of Human Ecology/
** NYS-EMS CFR : Division of Nutritional Science

607.255.1128 - Voice, 607.255.3794 - FAX
G85 MVR Hall, Cornell University, Ithaca NY, 14853

3382. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 04:57:07 UTC
From: btrembla@shark.stmarys.ca
Message-ID: <3ac3f3$ad5@Owl.nstn.ca>
Source record: 115579
Body handling: HTML body converted to readable text

In article , p.tyers@trl.oz.au (Peter Tyers) says:
>In article fentem@esmun.gtri.gatech.edu (David R. Fentem) writes:
>>>>Padon my ignorance. What in blazes (no pun intended) is a flame
>>>speaker??
>Wireless World (or Wireless World & Electronics, I can't remember when it
>transmogrified) wrote them up in the early 1980's.
[. . .]
> Supposedly had remarkable response but for
>reasonable bass response had to have a VERY long flame, the gas bill might be
>interesting.

Imagine it this way: the ionized particles in the flame (we fed brine to
the flame through an asbestos wick) are pulsed by the modulated DC ...
low mass ergo: high resonant frequency. The best setup I saw was at Northern
Alberta Institute of Technology (open house) back in ... 1970? _Great_ hi-fi; super
clean tweeters! ... they actually had _some_ mids (no bass to speak of) with a
very long bunsen burner flame (say 18" or so) ... pretty cute!
I don't know if the things would actually pull anything like 300ma ...
ben VE1CBV

3383. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 15:57:06 UTC
From: bowling@cebaf4.cebaf.gov
Message-ID: <CzDAz6.8KE@murdoch.acc.Virginia.EDU>
Source record: 115573

This flame speaker thing sounds real interesting!!!!
This is the first I have heard of such a thing. Are
they easy to build? I have only read bits and pieces
on this group - can someone really explain how this
works, maybe with ASCII art. This seems like a good
classroom demo, and something I would like to
construct, so any pratical info is nice.......

- Bruce
bowling@cebaf.gov

3384. tower dimensions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 16:27:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.66.546@acenet.com>
Source record: 115569

Newsgroups: rec.radio.amateur.homebrew

LH>If anyone knows the width of the side of a triangular tower please post. We
LH>are designing supports for a pushup pole but may install a tower at a later

Larry, there are dozens of different kinds of towers.
How about supply the information like MAKE and MODEL?!
Then maybe someone on here can help you! regards - Brian, AF4K
Brian Carling
FIDO Netmail - 1:109/423
Familynet ---- 8:7002/25
Phileonet ---- 777:100/14
MJCN --------- 8:7002/25
Internet ----- Brian.Carling@acenet.com
Packet ------ AF4K @ W3INK.#MD.USA.NA

 SLMR 2.1a Betazoid modem: downloads the files it senses you want.

3385. Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 17:01:49 UTC
From: wroach@netcom.com
Message-ID: <wroachCzDDz2.s7@netcom.com>
Source record: 115570

Need application data on Toshiba Linear IC number TA 7641

16 lead am radio with audio. Any specifications you can provide would help because i have nothing on thiss chip.

email or respond.

3386. Re: Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 18:50:53 UTC
From: tomb@lsid.hp.com
Message-ID: <CzDJ0t.Cup@hpcvsnz.cv.hp.com>
Source record: 115575

Brian Carling (brian.carling@acenet.com) wrote:

: ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825

: JAN Crystals 800-526-9825

I think the similarity got to ICM. (ICM-XTAL versus JAN-XTAL.) Their most recent ads (in RF Design magazine) list 1-800-725-1426 as the voice number. Maybe that's 1-800-PAL-1HAM ?? ;-) They also have a toll-free fax number.

73, K7ITM

3387. Re: PCB cad software ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 20:45:12 UTC
From: magoo871@buzzard.csrv.uidaho.edu
Message-ID: <3adr0o$sg6@owl.csrv.uidaho.edu>
Source record: 115574

> output... I'm curious what software folks are using to generate the
> artwork. I'm specifically interested in a low-cost package that can
> be used to make stripline designs (lots of area fills, tapered lines,
> etc) rather than something that caters to plunking down a bunch of
> 40-pin DIPs. I've looked at several of the demo packages

Chris,
After going through several demo PCB Cad packages of all types
and prices, I finally settled on Tango. It was not cheap by any means!
But I found that you got what you paid for with the cheap varieties. Of
course, I wanted to be able to do multiple sides, varied trace thicknesses
and SMT stuff. Orcad does all that but was unbelievably high priced for
my pocket book.
Tango is capable of RF stuff, but you have to do some "finagling"
sometimes to get what you want. They have a good "polygon fill" function
that really helps, as well as arc drawing and thick traces - just about
any thickness you want.
Every package I tested was clearly geared for 40 pin dip
plunking, including Tango. Also the PCB router programs seem to be the
same. I have yet to see anything geared for RF buffs (if anyone has
seen otherwise, please correct me!). What would be *really* nice would
be automatic polygon fill. It takes hours of extra work to fill in all
the empty space with ground plane.
Sorry I couldn't give you anymore help! Maybe someone else out
there can comment?

Steve
magoo871@uidaho.edu

3388. Re: Radio Shack Pro2020 Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 20:48:09 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Nov16.204809.10682@grian.cps.altadena.ca.us>
Source record: 115590

aankrom@crow.ucs.indiana.edu (aankrom) writes:

> Recently purchased an old scanner (The abovemodel...). I thought it was
>an OK bargain @ $20.00 even though the store clerk assured me that it DIDN'T
>work. I thought the fix would probably be something simple, but when
>I opened it up it looked like a brick had fallen on the antenna (which
>wasn't with the unit) and had smashed the PC board. Well I shouldn't say
>samshed - A chucnk of the board was broken away, but it was only the part
>that held the antenna and some of the ground (not really a ground PLANE...).
>I thought a little PC board surgery might do the trick since it appeared
>that most of the parts hadn't been misaligned too much. I scraped away
>the "Green Stuff" and put a nice, neat glob of solder to reconnect each
>trace. Most of the breaks were hairline, so I thought that this should
>work fine. NOW the PROBLEM _seems_ to have nothing to do with the board
>damage - The keyboard will take entries whenever it FEELS like it. It
>acts sort of brain-dead. This part of the unit is on the opposite side as
>the antenna on a completely separate board. (I'm assuming one board
>is for computer control and the other part is the actual radio...)
>I'm sort of flying blind since the manual didn't come with it.
>I was also wondering what possibilities there are for filling in the
>gaps in its range (provided I can get the unit WORKING!). And no I'm not
>expecting to get cellular or anything like that. It has a top end of
>512 MHz and I don't expect it to go much HIGHER than that...

>Actually ANY input at all on this particular unit would be helpfull.

RS sells (or at least used to) service manuals - most ahve schematics.

They also have a service center in Santa Fe Springs, CA. (near Los
Angeles. Check 213 or 310 information (it's right on the border).
They might have a schematic they could mail you.
--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3389. Re: PCB cad software ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 21:48:34 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.785022514@aries>
Source record: 115588

magoo871@buzzard.csrv.uidaho.edu (Steve Magoon) writes:

>> output... I'm curious what software folks are using to generate the
>> artwork. I'm specifically interested in a low-cost package that can
>> be used to make stripline designs (lots of area fills, tapered lines,
>> etc) rather than something that caters to plunking down a bunch of
>> 40-pin DIPs. I've looked at several of the demo packages

>Chris,
> After going through several demo PCB Cad packages of all types
>and prices, I finally settled on Tango. It was not cheap by any means!
>But I found that you got what you paid for with the cheap varieties. Of
>course, I wanted to be able to do multiple sides, varied trace thicknesses
>and SMT stuff. Orcad does all that but was unbelievably high priced for
>my pocket book.
> Tango is capable of RF stuff, but you have to do some "finagling"
>sometimes to get what you want. They have a good "polygon fill" function
>that really helps, as well as arc drawing and thick traces - just about
>any thickness you want.
> Every package I tested was clearly geared for 40 pin dip
>plunking, including Tango. Also the PCB router programs seem to be the
>same. I have yet to see anything geared for RF buffs (if anyone has
>seen otherwise, please correct me!). What would be *really* nice would
>be automatic polygon fill. It takes hours of extra work to fill in all
>the empty space with ground plane.
> Sorry I couldn't give you anymore help! Maybe someone else out
>there can comment?

Autocad and some self gearing?

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

3390. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 21:53:50 UTC
From: dpalik@milori.ccit.arizona.edu
Message-ID: <1994Nov16.145350.1@milori.ccit.arizona.edu>
Source record: 115589

In article <3a7lr2$iro@newsbf01.news.aol.com>, jimn0oct@aol.com (JimN0OCT) writes:
> In article <fentem.16.0@esmlsun.gatech.edu>, fentem@esmlsun.gatech.edu
> (David R. Fentem) writes:
>
>
> I have a list of suggested parts for building a Flame Speaker. One of the
> items in particular is kind of hard to come by. I am looking for an
> adjustable high voltage power supply (500volts at 300ma minimum). The
> author
> of the experiment said that he found/used a Sorensen BB500. I am trying
> to
> round this up to use it as a demonstration in a middle school science
> class,
> so I don't have a lot of money to spend. If anyone knows where I can find
> such an animal, please send an e-mail message to:
> suzanne_mason@smtp.rc.trw.com
> I only have mail access to the internet. Thanks.
>
> ------------------------------------
>
>
> +---+
> | David R. Fentem | david.fentem@gtri.gatech.edu |
> | Georgia Tech Research Institute | CompuServe: 70674,3306 |
> | GTRI/ELSYS/ESMD | Voice: (404) 894-7045 |
> | Atlanta, GA 30332-0800 | FAX: (404) 894-7080 |
> +---+
>
> ---------------------- ------------------------------------
>
> Padon my ignorance. What in blazes (no pun intended) is a flame
> speaker??
>
> jim n0oct

As I recall, back in the early '80s there were gas- (or was it plasma-)
ionization speakers available commercially. I forget the name, perhaps one of
the rec.audio folks would know. Unfortunate side effect was that the gas
emmitted while listening was rumored to be toxic. But I suppose that's all
the better to impress your friends when cranking up the heavy metal.

Don

3391. Re: Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-16 23:53:52 UTC
From: kenw@col.hp.com
Message-ID: <3ae62g$mgd@nonews.col.hp.com>
Source record: 115576

Doesn't MFJ sell one of these?

3392. Ooops!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 01:42:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.67.546@acenet.com>
Source record: 115577

Newsgroups: rec.radio.amateur.homebrew

BM>I'm looking for a source for crystals. Anybody got a favorite?

Hi Bret - try these:

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Crystek Crystals 800-237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

International Crystal Mfg Co. 405-236-3741
10 North Lee Street Crystals!
Oklahoma City, OK 73102

ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825
P.O. Box 26330: 701 W. Sheridan
Oklahoma City OK 73126-0330

JAN Crystals 800-526-9825: 813-936-2397
P.O. Box 06017: 2341 Crystal Drive: Crystals
Ft. Myers, FL 33906-6017

Ryan Communications 412-368-3859
BOX 111E Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

I hope that helps you!

Corrections, additions to:

Brian Carling
18016 Fertile Meadow Ct.
Gaithersburg, MD 20877

FIDO Netmail - 1:109/423
Familynet ---- 8:7002/25
Phileonet ---- 777:100/14
MJCN --------- 8:7002/25
Internet ----- Brian.Carling@acenet.com
Packet ------ AF4K @ W3INK.#MD.USA.NA

Apologies to all if this was addressed in error. I'm new here.

 SLMR 2.1a A Religion is a Cult with Real Estate

3393. Oooops!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 01:43:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.68.546@acenet.com>
Source record: 115578

Newsgroups: rec.radio.amateur.misc,rec.radio.amateur.homebrew

FAW>A friend of mine is looking for 2C39 BA / 7289 tubes (new or used). He's
FAW>looking for an address where he could buy them. These tubes are for SHF
FAW>as I understand.

Try these sources:

Adkins:Charles P. N8QXP 313-382-0272
1821 La Blanc. Tubes
Lincoln Park,MI 48146

Allied Electronics: 800-433-5700 Located in 36 states, 83 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes. Min.Prepaid
order $25. Min. Credit Card order $50 as well as COD is $50. Min.

Antique Audio 512-467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits

Antique Electronic Supply Co. 602-820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

A.R.S. 602-820-5411
Arizona Need address Tubes

Bauman:Jeff, WB5KZW. 313-435-9922: 313-661-0202 Jeff had 1500 Tubes
6647 Stonebridge East, for sale as of December,1993
West Bloomfield, MI 48322

Cable:John, 619-258-7931
Address needed. Tubes from 1941 to 1960, new.

CeCo Communications. 800-221-0860: 212-646-6300
2115 Avenue X Vacuum tubes
Brooklyn, NY 11235

C & N Electronics 800-421-9397: 612-429-9397
6104 Egg Lake Road FAX 612-429-0292
Hugo, MN 55038 Buy & sell tubes

Daily Electronics 800-346-6667: 206-896-8856: FAX 206-896-5476
10914 N.E. 39th Street
Vancouver, WA 98682 Tubes, all types.

Davilyn Corp. 800-235-6222 xct.CA: 818-787-3334 CA: FAX 818-787-4732
13406 Saticoy St. Electronic Tubes. Good Prices, Call for Catalog
North Hollywood, CA 91605-3475 Also Surplus Electronic Gear.

DH Distributors 316-684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Electron Tube Enterprises 802-879-0611
Box 311
Essex, VT 05451 Tubes

Electronic Bits 'N Pieces 303-361-6530
P.O. Box 31654
Aurora, CO 80041 Tubes, transistors, diodes, chips

Fair Radio Sales. 419-227-6573:419-223-2196: FAX 419-227-1313
1016 E. Eureka Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send S.A.S.E.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

International Components Corp.800-325-0101: FAX 503-336-4400
1803 NW Lincoln Way Cabinets, components & vacuum tubes
Toledo, OR 97391

Jolida Tube Factory 800-783-2555
10820 Guilford Road Vacuum tubes
Annapolis Junction, MD 20701

Kirby No number listed
298 W. Carmel Drive Tubes, new up to 90% off
Carmel, IN 46032

New Sensor Corp. 800-633-5477: 212-529-0466: FAX 212-529-0486
133 Fifth Avenue. Vacuum tubes galore! Call for list.Min.Order $50.
New York, NY 10003 Std. test= $0.75/Tube. Premium Match $2/Tube

P.E.M. Tubes 916-383-9107
7392 French Road Tubes, radio, TV, transmitting, CRT
Sacramento, CA 95828

Pride Tubes 800-638-3925: 205-650-5522: FAX 205-880-8077
8200 South Memorial Parkway 100% RF Tested Tubes
Huntsville, AL. 35802 Competitive prices.

Rauchwerger, Lawrence 217-352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

R.F Parts. To Order 800-737-2787:619-744-0700 or 0750 for Tech info
1320 Grand Avenue FAX 619-744-1943
San Marcos, CA 92069 Diamond Antennas, RF Power Transistors & Tubes.

Steinmetz Electronics 219-931-9316
7519 Maplewood Avenue Tubes
Hammond, IN 46324

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Unity Electronics No number listed
P.O. Box 213 Vacuum tubes
Elizabeth, NJ 07206

I hope that helps your friend!

73 from AF4K

Additions? Corrections?

Brian Carling
18016 Fertile Meadow Ct.
Gaithersburg, MD 20877

FIDO Netmail - 1:109/423
Familynet ---- 8:7002/25
Phileonet ---- 777:100/14
MJCN --------- 8:7002/25
Internet ----- Brian.Carling@acenet.com
Packet ------ AF4K @ W3INK.#MD.USA.NA

Apologies to all if this was addressed in error. I'm new here.

• SLMR 2.1a • Gullible isn't in the dictionary. Really, go ahead, look!

3394. Re: Converting a Modem into a TNC - Is it possible?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 01:49:12 UTC
From: Cecil_A_Moore@ccm.ch.intel.com
Message-ID: <3aecqo$sil@chnews.intel.com>
Source record: 115616
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.equipment

In article <3abb5l$7m4@newsstand.cit.cornell.edu>,
Alex Nemeth <amn1@cornell.edu> wrote:
>I heard that there might be a schematic floating around that will allow
>you to convert a modem into a TNC. Does such a thing exist? I'm just
>starting to get into Packet and I'm about to come into about 6 Hayes 1200
>Bd Modems (internal) , and a couple of 2400 modems. and this would be
>an interesting project to work on, not to mention saving me much $$.

Hi Alex, your 1200 baud Hayes modems are probably the Bell 212 standard
which, to the best of my knowledge, are not used for RF. The Bell 202
standard is used for some VHF packet but I doubt that the above mentioned
modems will do Bell 202 which is FSK 1200/2200 Hz compared to the 4DPSK
of the Hayes 1200 baud modems.

The ARRL Handbook has a good writeup on ham modems in the digital
communications chapter. Let us know if you have any luck converting
Bell 212 modems for ham use.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3395. Police Mobile Data Terminal

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 02:12:12 UTC
From: alx@euronet.nl
Message-ID: <alx.7.0002342F@euronet.nl>
Source record: 115591

Hi there,

Who can tel me how the MDT or the Mobile Data Terminal, used by the Amsterdam police, works and what kind op protocol it uses. Also I want to know if it can be recieved and decoded ?

alx

3396. Will pay $20 for R-5000 Serv. Man.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 02:52:54 UTC
From: cmundy@blkbox.com
Message-ID: <3aegi6$kte@news.blkbox.com>
Source record: 115598

Looking for a copy of the Kenwood R-5000 Service Manual. Will pay $20
for a copy of this. I want to do a little homebrewing on my unit, brave
(or foolish) soul that I am! Please send (with enclosed bill) to:

Claude Mundy
909 Silber, #8
Houston, TX 77024

Alternatively, E-Mail me and I'll send you a check first. Thanks!

3397. HELP!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 03:20:10 UTC
From: wroach@netcom.com
Message-ID: <wroachCzE6LM.6Fs@netcom.com>
Source record: 115601

Need application data on Toshiba Linear IC number TA 7641
16 lead am radio with audio

Any help you can provide would help, i have nothing on this chip.

Email or respond

thanks

3398. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 03:34:52 UTC
From: pazar@PROBLEM_WITH_INEWS_GATEWAY_FILE
Message-ID: <3aej0s$19t@canyon.sr.hp.com>
Source record: 115603

Yes, I remember playing with these things in high school. The best source of the high voltage transformer is an old TV set. Check out local garage sales, or visit a TV repair shop (if you can find one). The HV secondaries were typically 560 volts center tapped at 350 mA. You can ignore the other windings, or use them to power a 5U4 rectifier tube to get your DC. Come to think of it, an old TV chassis will probably have a heafty choke and filter caps. Beware of the old filter caps though because they get leaky with age. Best to buy new caps if possible.

Oops...while re-reading this I realize that by HV transformer someone might think I'm talking about the flyback. Nope...I mean the power transformer for the set.

Have fun, and be careful...you're playing with something that can KILL!

****
* STEVE PAZAR DoD #702 Kawasaki KZ440A
* E-mail: pazar@sr.hp.com
* Ether: WA4DUT/6
* Stupid is forever, ignorance can be fixed...
****

3399. Re: Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 03:47:36 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <941117.034736.2w8.rusnews.w165w@opus-ovh.spk.wa.us>
Source record: 115580

nprjr@aol.com (NPRjr) writes:

> In article <39v0v0$ejo@tadpole.fc.hp.com>, mckee@fc.hp.com (Bret McKee)
> writes:
>
> I'm looking for a source for crystals. Anybody got a favorite?

I've got a bunch of RF pulls, mostly in the KHz range, that I'm trying
to get rid of. Price could be cheap to free. What do you need?

--
Brian J. Mork. Voice (509) 244-3764 Data (509) 244-9260
UUCP bmork@opus-ovh.spk.wa.us / ARO ka9snf@ka7fvv.#ewa.wa.usa
USMail 6006-B Eaker, Fairchild, WA 99011

3400. Re: Radio Shack Pro2020 Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 05:35:15 UTC
From: clifto@indep1.chi.il.us
Message-ID: <CzECur.GsF@indep1.chi.il.us>
Source record: 115581

A friend got one of these for nothing, and it too was acting brain-dead, accepting entries when it was in the mood, etc. etc. I began to troubleshoot it by unplugging some connector that appeared to connect the main board to the power supply, then checked the supply voltages (all OK). Then I plugged it back in to make ready for the next step, and it had fixed itself. Corroded connections.

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3401. Re: More confusing stuff

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 11:09:12 UTC
From: wrt@eskimo.com
Message-ID: <CzEsBF.ArC@eskimo.com>
Source record: 115582

In article <3a9hlk$fap@chnews.intel.com>,
<Cecil_A_Moore@ccm.ch.intel.com> wrote:
>Here's an interesting set of measurements. IC-745 on 10m, MFJ-949 SWR
>meter, quarter-wave of RG-8X on 10m. With a 50 ohm dummy load the SWR
>is 1:1. With a 25 ohm dummy load the SWR is 1.2:1. With a 100 ohm dummy
>load the SWR is 1.7:1. All three measurements were with 10w output.
>Why don't I see an SWR of 2:1 on the unmatched loads?
>--
>73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)
>

Most SWR meters are non-linear at low power levels due to the diode's
threshold of conduction. Crank up the power and you'll get more
realistic results.

73, W7LZP

3402. Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 11:53:12 UTC
From: kevin.jessup@mail.mei.com
Message-ID: <kevin.jessup.129.0012F85B@mail.mei.com>
Source record: 115478

Anyone else working with Analog Devices' (or anyone else's) fast ADC's
and digitizing at the first IF stage, then demodulating using a DSP
(with all the benefits of digital filters), and finally, going through a
DAC to get the audio?? Do you think I could have made that sentence
any longer?? :-))


```
P A R A D I S E * *
TAR & ASPHALT * * * *
* * )
__ * ) (
|| _____ || kevin.jessup@mail.mei.com (
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```


"Paving paradise and putting up parking lots."

3403. How to align Weston type 1234 panel meter ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 14:58:03 UTC
From: charlos@rivm.nl
Message-ID: <CzF2ws.Gt8@rivm.nl>
Source record: 115584
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

hello all,

I have been given a 4 1/2 digit panel meter with a 199.99 mV range.
It is a Weston type 1234-276493.
I want to make a resistance divider for it so I can measure voltages
up to 20 V.
Yesterday I checked the meter with a precision voltage source and
found that the calibration ot the meter is way off.
(now I know why I got it for free :-))
The meter has 5 small potentiometers which are behind the plastic
front cover.
Question: does anyone know how to align this type of meter ?
What are the 5 potentiometers for ?

thank you,

PA3CKR, Charlos Potma
charlos@rivm.nl

3404. Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 15:13:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <01HJKX4EHPQQ004NCF@uthscsa.edu>
Source record: 115607

kenw@col.hp.com (Ken Wyatt) writes:

>Subject: Where can I find a grid dip meter?
>
>Doesn't MFJ sell one of these?
>

Ken,
Note the name of this list HOMEBREW..hi hi.
They are very easy to build. There is one in the ARRL Handbook.
I think that Radio Electronics for November also has one.
The one in the handbook will cost you around $25 to build depending
on how fancy you get with the case. If you have a handheld
frequency counter it will be just as accurate as any commercial
dip meter.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
****

3405. Re: PCB cad software ? - signatur [1/1]

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 15:23:33 UTC
From: tom.collins@gtri.gatech.edu
Message-ID: <3afshl$mn@mordred.gatech.edu>
Source record: 115585

In article <3adr0o$sg6@owl.csrv.uidaho.edu>, magoo871@buzzard.csrv.uidaho.edu (Steve Magoon) says:
>
>> output... I'm curious what software folks are using to generate the
>> artwork. I'm specifically interested in a low-cost package that can
>> be used to make stripline designs (lots of area fills, tapered lines,
>> etc) rather than something that caters to plunking down a bunch of
>> 40-pin DIPs. I've looked at several of the demo packages
>
>Chris,
> After going through several demo PCB Cad packages of all types
>and prices, I finally settled on Tango. It was not cheap by any means!

. . . stuff deleted . . .

> What would be *really* nice would
>be automatic polygon fill. It takes hours of extra work to fill in all
>the empty space with ground plane.
> Sorry I couldn't give you anymore help! Maybe someone else out
>there can comment?
>
> Steve
> magoo871@uidaho.edu

Protel's Advanced PCB definitely supports automatic polygon fill. It even lets you associate netnames with each polygon and keeps track of connectivity (directly or with thermal reliefs). The only problem is that is intended for power/ground planes and is therefore implemented with photographically-reversed (i.e., negative) artwork. Since you would want to put traces on the same layer, you would have to superimpose two layers of artwork on the same physical layer, which should be no major problem. But then again, I've never done it. (I have used it for complex split power/ground planes, however).

Thomas R. Collins tom.collins@gtri.gatech.edu
Senior Research Engineer (404) 894-2509
Georgia Tech Research Institute .
Electronic Systems Laboratory ^
400 Tenth St. NW, CRB 411 ^
Atlanta, GA 30332-0840 Tiny high-resolution ASCII art. Magnify to see.

3406. Re: (newbie question) Re: Where does the power go

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 17:11:13 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <CzF92q.BDG@hpqmoea.sqf.hp.com>
Source record: 115614

OK, let's tackle the first part of your question.

An inductor IS an energy store. In a simple, air wound coil, the stored energy is located in the field surrounding the coil when it is carrying current. More complex types of inductor have cores, and sometimes cores with airgaps. The energy-containing mag field can be concentrated in them. The energy stored = 1/2 * L * current^2
A perfect inductor storing an unchanging amount of energy is carrying a fixed amount of current, and has zero volts across it.

A capacitor is a sort of mirror image of this. It too stores energy. The energy is physically located in the electric field between the capacitors plates. If there is no dielectric between the plates, again, we have the rather interesting concept of energy being stored in nothing - in empty space. Some capacitors have material deliberately placed between their plates to increace their capacitance. In such cases more energy can be stored, as distortion of the electron trajectories in the atoms of the material. The energy stored = 1/2 * C * voltage ^2
A perfect capacitor storing an unchanging amount of energy has a fixed voltage across it, and is carrying zero current.

You should be able to see how the two parts are complementary to each other.

If we connect a capacitor across an inductor, we create a resonator. Energy can flow from inductor to capacitor and from capacitor to inductor. The capacitor discharging into the inductor creates current and hence a magnetic field. The inductor's field, in collapsing, charges up the capacitor. Unless the energy in the system is zero, there can be no stable condition. Current and voltage will vary sinusoidally.

Think of a pendulum, it has two energy-stores. momentum and elevation. At the extreme of a sweep, velocity is momentarily zero, so there is no kinetic energy, but the potential energy of the raised weight is at its maximum. In the centre of the sweep, the potential energy has all gone - gone into kinetic energy, for the velocity, and hence kinetic energy is at its maximum. This is a good analogy for an LC circuit. Any losses will make a pendulum's energy decay, so too for the LC circuit.

We don't have to connect an external circuit across the whole L or whole C, we could split L or L into two parts (either effectively in series or parallel) this allows us to connect into PART of the circulating current or voltage.

You should now be able to envisage an LC circuit - usually called a "Tank" with a circulating voltage and current, with some external circuit connected into part of the tank so that the external circuit sees only a controlled proportion of the full tank voltage or current.

We can couple a second external circuit into the tank by doing another, different component-split. The proportion of current or voltage of the full tank seen in this circuit can be set independantly of the first.

You should now be able to envisage a tank containing a large amount of circulating energy, with a smaller flow of energy coming in from one external circuit, and going off to the second external circuit. By setting the relative coupling proportions of each of the external circuits, we can change the impedance level of the passing signal. Think of, for example, an input tapped into a high-voltage, low current component split, and the output tapped into a higher current, lower voltave component split.

This is a resonant impedance transformation, it is only good over a limited frequency range. The "Q" of the resonator, affected by both couplings, sets this bandwidth.

This sort of circuit can tolerate external circuits with reactive (inductive or capacitive) components to their impedances, if the component values are shifted to compensate.

Does this help ? Do you want a reference to e decent mathematical treatment of antenna tuners?

Cheers
David GM4ZNX

3407. Re: PC BRDS XY RESIST IN

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 17:56:58 UTC
From: hbrown@nadir.resd
Message-ID: <1994Nov17.175658.21088@knight.vf.ge.com>
Source record: 115586

Here's info from the rec.radio.swap net. Hope it's useful.
73, Harry, W3IIT

.....
From bob.albert@ledge.com (BOB ALBERT)
Newsgroups: rec.radio.swap
Subject: HP 7475A Plotter 4sale or trade
Date: Sat, 12 Nov 94 21:44:00 -0800

Hi Dave! How much is that plotter worth? And by the way, I got an
ad in the mail for refurbished HP 500C printers for $180 with warranty.

73 DE K6DDX
.....

3408. Re: Local TV Jammer....How about just one channel?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 18:30:08 UTC
From: edw@sequent.com
Message-ID: <1994Nov17.183008.12763@sequent.com>
Source record: 115592

I've had good luck with an RF sig gen tuned to either the carrier
or the first IF.
It outlawed RAP in my house :-) ie no more reception of the local
(c)RAP station.
Does TV ok too
Ed.

In article <TStewart.71.2EC6CEC9@massey.ac.nz>,
<T.Stewart@massey.ac.nz> wrote:
>(Ducking flames about neighbourhood pollution etc...)
>
>O.K. O.K....someone has pointed out good technical reasons as to why a
>broad-bandwidth jammer is rather antisocial, and would be difficult to confine
>to the house.
>
>Where we live, we only have 3 TV channels. Of these, two close down before
>2am. Only one goes through into the small hours. How feasible would it be to
>build or amend a small low powered transmitter which sent a carrier wave on
>just this chanell (it's somewhere in the VHF band...I'm not sure exactly where
>yet). Could the power be kept low enough to give a lousy picture on our
>sets but not affect the neighbours?
>
>Cheers
>
>Terry
>
>***
>* Terry Stewart *
>* Department of Plant Science *
>* Massey University *
>* Palmerston North *
>* New Zealand *
>* *
>* T.Stewart@massey.ac.nz *
>***

--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

3409. Linear Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 18:39:43 UTC
From: Brad Herring <herring@nps.navy.mil>
Message-ID: <3ag81f$gt6@nps.navy.mil>
Source record: 115599

Hello All,
I have a question concerning linear amps. I know that there are
two different classes of amps. Class "C" and Class "AB-1". Can anbody
explain the difference between the two and whcih would be a better
amp for the money. This amp will also be used in a mobile. Help
the confused!!!!!!

Thanks in Advance!!!
Brad

3410. Re: Local TV Jammer....How about just one channel?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 18:40:33 UTC
From: edw@sequent.com
Message-ID: <1994Nov17.184033.13465@sequent.com>
Source record: 115593

Oh Yeah
Just make a folded dipole from twinleed for an antenna
Adding a reflector is a neighbor friendly gesture depending on
how hard you crank the output
73
e

In article <1994Nov17.183008.12763@sequent.com>,
Ed Wright (0x0E2 UNIX The saga Never Ends) <edw@sequent.com> wrote:
>I've had good luck with an RF sig gen tuned to either the carrier
>or the first IF.
>It outlawed RAP in my house :-) ie no more reception of the local
>(c)RAP station.
>Does TV ok too
>Ed.
>
>
>In article <TStewart.71.2EC6CEC9@massey.ac.nz>,
> <T.Stewart@massey.ac.nz> wrote:
>>(Ducking flames about neighbourhood pollution etc...)
>>
>>O.K. O.K....someone has pointed out good technical reasons as to why a
>>broad-bandwidth jammer is rather antisocial, and would be difficult to confine
>>to the house.
>>
>>Where we live, we only have 3 TV channels. Of these, two close down before
>>2am. Only one goes through into the small hours. How feasible would it be to
>>build or amend a small low powered transmitter which sent a carrier wave on
>>just this chanell (it's somewhere in the VHF band...I'm not sure exactly where
>>yet). Could the power be kept low enough to give a lousy picture on our
>>sets but not affect the neighbours?
>>
>>Cheers
>>
>>Terry
>>
>>**
>>* Terry Stewart *
>>* Department of Plant Science *
>>* Massey University *
>>* Palmerston North *
>>* New Zealand *
>>* *
>>* T.Stewart@massey.ac.nz *

>>**
>
>
>--
> I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
> ^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
> ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
> ^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

3411. mixer designs...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 18:57:53 UTC
From: abergsma@doe.carleton.ca
Message-ID: <CzFE0H.C4y@cunews.carleton.ca>
Source record: 115595

hi there,

anybody here have any comments on the usability, suitability,
or designabilty of diode mixers in the 10-70MHz range?

I'm making a multi-channel txr/rxr and need to
do some mixing....any comments on noise produced etc???

aj

3412. Re: Mini 9V Battery Transmitter - where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 19:33:15 UTC
From: bblohm@boi.hp.com
Message-ID: <3agb5r$ma9@hpbs3591.boi.hp.com>
Source record: 115587

George Van Wagner (vanwag@netcom.com) wrote:
: Look in the latest QST (Nov.). They have a construction project for a 9
: volt powered QRP transciever for 40 and 80 meters.

Sounds interesting. Without access to QST, how might I obtain a copy of
this article?

Bill B.
bblohm@hpbs1686.boi.hp.com

3413. Re: mixer designs...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 20:53:09 UTC
From: kuehn@hera.cc.bellcore.com
Message-ID: <3agfrl$mud@hera.cc.bellcore.com>
Source record: 115611

In article <CzFE0H.C4y@cunews.carleton.ca>,
A.J. Bergsma <abergsma@doe.carleton.ca> wrote:
>hi there,
>
>anybody here have any comments on the usability, suitability,
>or designabilty of diode mixers in the 10-70MHz range?
>
>I'm making a multi-channel txr/rxr and need to
>do some mixing....any comments on noise produced etc???
>
>aj

I can tell you about my experience:

1. I have used diode mixers in ring configuration from
0.5 MHz to 146 MHz range with excellent result.

2. Used 4 X 1N914 or 4 X 1N4148 and trifilar winding on
toroids at input and output.

3. I use to match the diodes as far as possible for
equal forward and reverse resistances from a pool
of diodes before using them.

4. They do need more injection than active mixers, probably
8 to 10 times the input level.

5. Diode mixers have probably about 8/10 db loss (hence
equivalent noise)

6. I would not suggest using them directly at the RX input
in VHF because of this lossy nature. But on HF they could
be used without any RF amp at RX input.
I hope it is of some help. 73 - de miki W2/VU2MKI

3414. Summary for iron & peel PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-17 21:11:57 UTC
From: snorris@harp.aix.calpoly.edu
Message-ID: <1994Nov17.211157.171515@zeus.aix.calpoly.edu>
Source record: 115597

I just wanted to that everyone who replied to my original post on this topic and to give a general summary.

There were many negative responses to the Print/Iron/Peel/Etch method that I was considering. Rough edges, drop-outs, and incomplete traces were common problems mentioned. So most tried to persuade me to use the photographic method with pre-sensitized boards for any kind of respectable traces. From this, I figured that I was just going to have to go through the hassle of the photographic method.

However, I also got several VERY good comments about a product called Press-n-Peel Blue by Techniks Inc. Most of the comments were so good that I figured I would order a few sheets and try the stuff out. The results were unexpected: A perfect board the very first time! Absolutely no drop-outs or pinholes, and I had some large ground plane areas. The traces were sharp and no widening was detected (sharp as my 300DPI laser could print them). I compared the board that I did to a friend's who used the photographic facilities at school and mine actually looked much better.

Oh, and from many of the replies that I got, It seems that the printer or copier used in the process makes a huge difference. The new really fast copiers don't seem to work well if at all. I personally used my HP 4L and set the density and darkness to the max. settings and it worked like a charm. Set the iron at the bottom of the steam range and iron for about 2 1/2 minutes, let it cool, peel off, brush off excess flakes, and etch. I've done a few boards so far and all of them have come out perfect.

Anyways, I just wanted to post a follow-up to give my results and to thank everyone who responded to the original post. Please feel free to E-mail me if you have any further questions.

thanks,

Sean

Sean Norris snorris@trumpet.aix.calpoly.edu
--KE6BTE-- Loyalty, above all else.

3415. Re: mixer designs...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 05:37:03 UTC
From: JWRS73A@prodigy.com
Message-ID: <3ahehv$2el8@usenetp1.news.prodigy.com>
Source record: 115609

aj

Diode mixers are frequently used in the hf-vhf range. You can make your

own or buy them cheap. Mini-Circuits Laboratories makes them. Look in
the back of QST for a company called RF Parts. One popular model is
called SBL-1. You may even see it listed in the RF Parts add. Also,
you
can find numerous construction articles and also articles on the care and
feeding of diode mixers (called DBMs for double balanced mixer) in the
ARRL Radio Amateurs Handbook.

Another approach is to use a Quad FET device. There is an incredibly
good
article in the latest Communications Quarterly (from CQ magazine) on FET
mixers that have IM3 up to 54 dbm! Good luck and let me know if you
need
more info.

-
DUDLEY CHAPMAN JWRS73A@prodigy.com

Life is better at 60 mph and 35 wpm - WA1X/m

3416. MFJ-259 antenna analyzer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 11:34:59 UTC
From: VK2ESL@vk2djg.une.EDU.AU
Message-ID: <3609@vk2yqa.ampr.org>
Source record: 115594

Hi from "Down under",
I have recently purchased the MFJ-259
in the hope that it may solve all my ant problems!
My problem is that I have not used a Frequency counter
before and the 259 has a counter built into it.
The manual is not clear as to wether I should build a probe
of some kind including capacitive coupling to provide
some sort of protection for the unit against dc voltages
or just make a probe to measure the frequency of
oscillators direct.

Many thanks in advance.

Steve.
--
Steve - VK2ESL - Walcha NSW Australia
AX.25 Packet - vk2esl@vk2doq
TCP/IP AX.25 - vk2esl.ampr.org [44.136.32.7]
Internet - vk2esl@vk2djg.une.edu.au

3417. Are these messages archived?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 16:03:26 UTC
From: cmundy@blkbox.com
Message-ID: <3aij8e$6gb@news.blkbox.com>
Source record: 115615

At the risk of sounding abysmally stupid, I was wondering if messages on this newsgroup are archived. If so, is there a way to access them? I'm interested in trying to find out if anyone has put up plans for building a serial interface for the Kenwood R-5000 receiver.

Also, how far back do the archives go? I have part of an E-Mail message writen back on 11/16/88 by Eric Roskos, titled "Kenwood R5000 Modifications". It is an absolutely wonderful writeup, but unfortunately, my version is partially garbled due to disk problems. It would be fantastic to get the original version back.

Good karma will follow you the rest of your life (I hope!) if you can help me out on this. Thnaks!

3418. Re: Mini 9V Battery Transmitter - where?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 16:15:00 UTC
From: vanwag@netcom.com
Message-ID: <vanwagCzH151.lpJ@netcom.com>
Source record: 115602

I'd try asking on the air, or check a library.

Bill Blohm (bblohm@boi.hp.com) wrote:
: George Van Wagner (vanwag@netcom.com) wrote:
: : Look in the latest QST (Nov.). They have a construction project for a 9
: : volt powered QRP transciever for 40 and 80 meters.

: Sounds interesting. Without access to QST, how might I obtain a copy of
: this article?

: Bill B.
: bblohm@hpbs1686.boi.hp.com
--
vanwag@netcom.com

3419. Spiral wound antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 16:25:22 UTC
From: slook@prairienet.org
Message-ID: <3aikhi$6dv@vixen.cso.uiuc.edu>
Source record: 115610

I am looking for design information on antennas that are electrically ok
but physically short. I had a CB antenna (Firestik) some years ago that was
made this way and I have seen some HF mobiles done this way. I looked in the
Handbook but it only mentions such antennas by saying the winding is
approximately 1 wavelength.
It doesn't give any other information such as how close the winding can be or
what the design trade-offs are. I would like to hear from anyone that may have
some knowledge of this type of antenna.
Thanks in advance.
--
Stephen R. Look KA9SZW Data Comm for Business
slook@prairienet.org PH: (217) 352-3207 807 Pioneer
FAX: (217) 352-0350 Champaign, IL 61820

3420. Minisport Laptop Hacker #24

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 16:56:49 UTC
From: bmork@comtch.iea.com
Message-ID: <3aimch$h61@krel.iea.com>
Source record: 115613
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

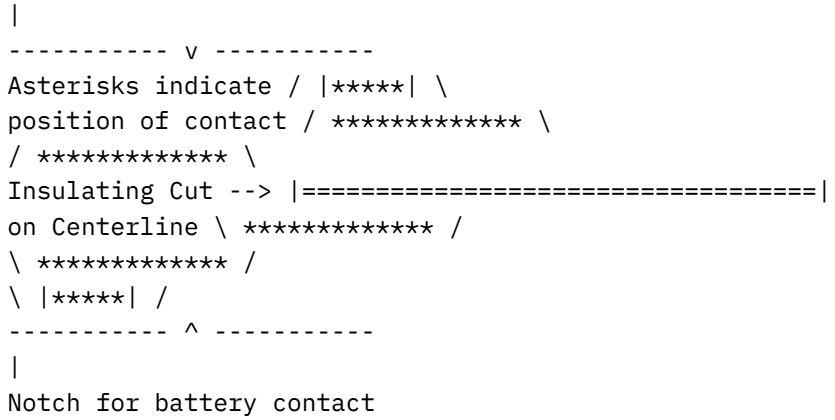
MiniSport Laptop Hacker (TM) - Vol #24. November 1994
To discourage pecuniary interests, Copyright (c) 1994 Brian Mork

>>> ADMIN
The MLHacker (TM) series is sized to print out on the front and back of a single 8.5"x11" sheet of paper, using 8lpi. You or your print program have to add your own page break lines or form feed character. Back issues are available from ftp.cs.buffalo.edu in the \pub\msdos\ham-radio directory, or on SimTel archives (e.g. oak.oakland.edu in the \pub\msdos\packet\mlhacker.zip file).

>>> MOBILE BATTERY POWER -- CONTINUED
Last issue, I included part one of Jim Harvey's description of how he made a suitable container for the custom battery pack. Here's the second and last part. Next issue I'll include his description of making a custom battery charger.

"Now solder the two brass contacts to the prepared PC board header. Support the PC board on a small piece of wood, copper side up. Tin the board where the contacts will lie, then place the prepared brass contacts on the board. Heat, and flow solder between the contact and board but don't let it run down the stem of the "T". Check the spacing and angle of your contacts on the battery. You can bend the brass to fit or reheat the assembly and move the contact a little. You want a firm, flat contact with the battery terminals when the header is aligned squarely on the top.

PC Board Header Top View With Battery Contacts Attached


Notch for battery contact
Asterisks indicate position of contact
Insulating Cut --> on Centerline
Notch for battery contact

Side Edge View of PC Header Showing Contact Position

```
(Foil side) *************
|===============*******************|
(Bare side) *****
***** Battery fits
***** here
*****
```

"Solder your power cable to the two halves of the header assembly. Use red and black wire to keep track of polarity. You MUST use an in-line fuse holder close to the battery pack with about a 5 amp fuse. Terminate the loose end of the cable with your power connector of choice and the contact header assembly is finished.

"The next step is to wrap the header and the top 2 1/2 inches of the battery pack with insulating fiberglass. Inexpensive auto repair resins set up quickly, so you must have all material cut in advance.

"Prepare a piece of fiberglass to cover the top of the battery by cutting a 2" by 3" piece of cloth and unraveling about 3/8 inch on each of the four edges. This will allow the material to fold down over the sides of the battery without wrinkling. Next, cut a 2 1/2" by 6 1/2 inch rectangular piece, which will wrap around the body of the battery. Cut two small 2 1/2" by 1/2" strips. These will help form a channel around the molded battery keyway, necessary to ensure later that the cap is slipped on with the proper polarity.

"Open the Condom and starting at the contact end, unroll it down over the whole battery. This will protect the battery from the fiberglass resin. Slip the completed contact assembly into working position on the battery over the Condom, taking care not to tear the latex. Now put a bit of half inch wide masking or electrical tape over the brass contacts, carefully sealing the tape to the latex on the sides and up over the top about 1/8 of an inch. You do not want the Epoxy to bind to the contacts in the fiberglass shell, they must be free to move a bit. Be sure to observe polarity of your cable at this time, it's easy to plug the header on backwards.

"Wrap string closely around the battery about 2 1/2 inches down from the top. This will form a reinforcing ridge at the bottom edge of the completed shell. Tuck the loose ends under, or tie an inconspicuous knot.

"You are ready to begin the messy fiberglass process. Spread newspapers around everywhere, this stuff is permanent. You should wear old clothes, rubber gloves and eye protection.

"Mix about an ounce and a half of Epoxy resin per the manufacturers directions. If you have a 3 or 5 ounce Dixie cup, it's easy to guess the amount. Remember, this type of Epoxy sets up in just a few minutes so it is important to plan and to have all the pieces of cloth prepared.

"Paint a thick coat of Epoxy on top of the contact assembly and around the edges. Place the unraveled 2" x 3" glass cloth on top and paint more liquid on the cloth until it is saturated. Brush the unraveled

edges down over the sides of the battery. Now apply Epoxy all the way down to the string and position the two narrow 2 1/2" x 1/2" strips on either side of the molded keyway that runs down the side of the battery case. This helps form a matching keyway in the fiberglass shell. Saturate these strips with resin, then center the 2 1/2" x 6 1/2" cloth over the key way and wrap it around the battery. The bottom edge should cover the string and the top edge should overlap the top of the contact assembly slightly. Flow resin over all the cloth until it is saturated and smooth it out with the brush. Rotate the assembly frequently to help keep the fluid from dripping.

"In about five minutes you will feel the brush start to drag. Continue to rotate the battery slowly to prevent drips until the resin has become stiff. Set the assembly aside for 4 hours or so to set up. When it is solid to the touch, you can gently pull the cap and Condom from the battery. The Condom will separate from the fiberglass with gentle tugging. Let the shell harden a few more hours and if there is still a sticky residue on the inside, wipe it out with a rag and lacquer thinner. Cut and sand the bottom edge even at the string and sand any rough edges on the fiberglass. Dimples, bubbles or ragged edges can be touched up with 5 minute Epoxy cement.

"Paint the finished shell if you desire, and you're done. I also constructed a couple of contactless fiberglass caps to protect my spare batteries from shorting out inside my tool box.

>>> EXTERNAL CGA MONITOR -- WITH COLOR!
I found a source for Minisport external screens. As you're probably aware, the Minisport has the internal logic to drive a Color Graphics Adapter (CGA) monitor. The built-in screen, of course, is monochrome, but there's a plug on the back to hook up an external, full-color screen. Wouldn't it be great to tap into this potential at minimal cost?

Here's what I found: A 5" color monitor, *not* enclosed in any case (you'll have to put it in a metal or wood box). From the picture, you get a tube and the electronics board mounted in a minimal frame arrangement. It runs off from 12 VDC and uses a standard interface connector. They cost $69 plus $5 s/h. Advertisements show up in the magazine _Midnight Engineering_.

The small size and mandatory custom enclosure could make for some interesting portable setups for use with the Minisport! They're available through Timeline Inc., 23605 Telo Ave,, Torrance, CA 90505. Technical info line is 310-784-5488. Orders only line is 800-223-9977. I have not purchased one of these, and I've not dealt with the retailer. I'm bringing it up here only to make known the availability of such a beasty. If you purchase one and use it with the Minisport, let me know!

Please provide feedback! * Direct data 1-509-244-9260
* ARO Net KA9SNF@ka7fvv.#ewa.wa.usa
* Internet bmork@opus-ovh.spk.wa.us

73, Brian * 6006-B Eaker, Fairchild, WA 99011

--
Brian J. Mork, O-V-H V:509-244-3764 D:509-244-9260
Inet bmork@comtch.iea.com / ARO ka9snf@ka7fvv.#ewa.wa.usa.na
USMail 6006-B Eaker, Fairchild, WA 99011

3421. :Schematics for an amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 17:09:00 UTC
From: dave.britt@nitelog.com
Message-ID: <cb.274.3636@nitelog.com>
Source record: 115596

Could anyone pair me up with a schematic to boost the transmitting
power of a citizen's band radio? I'm not too well versed in all
of this fun stuff, but any help you can offer would be great.

Also, if you know, what is the legal maximum transmitting power a person
can legally utilize? If it varies by state, I'm in Mississippi.

Thanks-

Dave Britt

3422. RF/Electronics Parts Data Available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 19:49:08 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <3aj0fl$9ck@usenet.rpi.edu>
Source record: 115608

```
--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342
```

3423. Re: RF/Electronics Parts Data Available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 20:06:20 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <3aj1fs$9cp@usenet.rpi.edu>
Source record: 115617

Lance Lascari WS2B (lascal@marcus.its.rpi.edu) wrote:
(NOTHING!!!)

Stupid computer :)

That last one was supposed to read something like this....

I've been collecting parts data, mostly RF parts data and utilities
for many months, and I've put them on my computer. They are now
available by anonymous FTP (or available via mosaic's ftp interface...
more on that later) for now. If things go well, this availability
will continue.

I have two requests:
1) please ftp the files between 7 am and 11 pm, the computer is
in my dorm room, and the drive is loud.
2) Please contribute!!

More on Item 2: If you have any parts data on RF transistors, diodes,
anything, please let me know, and I'll add it to the archive. Also,
if you have any free software/utilities relating to RF circuit design,
the same applies.

I have the following:

-Motorola RF data (which rev I'm not sure), noise and s
parameter data files that they provide on disk.
- NEC RF data (same as above) and plotting/selection utilities
(from the wireless sampler I won at packrats this year)
- HP parts data (and hp appcad in the software directory) that came
with hp app-cad

- some spice models for op-amps and such

That's it, so if you know where I can get more, please let me know!

Here's the addr: lancedude.stu.rpi.edu

The directory structure is a little Kooky, here's a summary

pub/Stuff/Electronics
pub/Stuff/Electronics/Data
pub/Stuff/Electronics/Data/RF_DATA
pub/Stuff/Electronics/Data/RF_DATA/moto
pub/Stuff/Electronics/Data/RF_DATA/nec_si
pub/Stuff/Electronics/Data/RF_DATA/nec_gaas
pub/Stuff/Electronics/Data/RF_DATA/HP

there's lots more there... poke around and find out for yourself

You can also get to lancedude through my www home page at rpi,
there's an FTP link to lancedude there (addr is in my sig).

73 and good luck,
de WS2B

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342

3424. SB401

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 20:08:49 UTC
From: "Colin Schmutter"
Message-ID: <3aj1kh$s0b@chopin.bcit.bc.ca>
Source record: 115600

I have acquired a Heathkit SB401 SSB transmitter without a manual.

The unit tests good into a dummy load but I am not sure of the impedance of the microphone required. A 600 ohm mic. produces a lot of distortion on audio of a monitor receiver. Can a 600 ohm mic be "adapted" to work or is a higher impedance mic required?

Any replies to CSCHMUTTER@BCIT.BC.CA

Thanks

Colin Schmutter
VE7CQH

3425. Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 20:54:49 UTC
From: jdc@cci.com
Message-ID: <CzHE3E.3Bn@sunsrvr6.cci.com>
Source record: 115604

I'm looking for a couple Mini-Circuits SBL-1H's to build the
VHF transverters from the ARRL Handbook. There are enough
companies that carry the SBL-1, but not the -1H version.

Any ideas on where to find this beastie?

73...Jim N2VNO

3426. Gonset receiver oscillator?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 21:50:21 UTC
From: rbellville@aol.com
Message-ID: <3aj7it$2r7@newsbf01.news.aol.com>
Source record: 115606

Does anyone have a good oscillator circuit to help maintain a stable receiver on a Gonset 6M AM rig? I'm looking to remote this radio and can't have it drifting.

Thanks,

- Rob, N1NTE

3427. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 22:15:14 UTC
From: jmccarty@spd.dsccc.com
Message-ID: <3aj91i$fk2@sun001.dsccc.com>
Source record: 115612

In article <CzDAz6.8KE@murdoch.acc.virginia.edu>,
Bruce Bowling <bowling@cebaf4.cebaf.gov> wrote:
)This flame speaker thing sounds real interesting!!!!
)This is the first I have heard of such a thing. Are
)they easy to build? I have only read bits and pieces
)on this group - can someone really explain how this
)works, maybe with ASCII art. This seems like a good
)classroom demo, and something I would like to
)construct, so any pratical info is nice.......
)
)- Bruce
)bowling@cebaf.gov
)

The first I heard of them was in about 1976. Popular Electronics ran
some construction articles.

Mike
---
char *p="char *p=%c%s%c;main(){printf(p,34,p,34);}";main(){printf(p,34,p,34);}

3428. Re: Where can I find a grid dip meter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-18 22:16:36 UTC
From: jmccarty@spd.dsccc.com
Message-ID: <3aj944$fk4@sun001.dsccc.com>
Source record: 115605

In article <01HJKX4EHPQQ004NCF@uthscsa.edu>,
Muenzler, Kevin <MUENZLERK@uthscsa.EDU> wrote:
)Note the name of this list HOMEBREW..hi hi.
^^^^^

ugh-ugh

Mike

```
char *p="char *p=%c%s%c;main(){printf(p,34,p,34);}";main(){printf(p,34,p,34);}
```

3429. Re: PCB cad software ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 09:16:56 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Nov19.091656.12801@grian.cps.altadena.ca.us>
Source record: 115472

magoo871@buzzard.csrv.uidaho.edu (Steve Magoon) writes:

>> output... I'm curious what software folks are using to generate the
>> artwork. I'm specifically interested in a low-cost package that can
>> be used to make stripline designs (lots of area fills, tapered lines,
>> etc) rather than something that caters to plunking down a bunch of
>> 40-pin DIPs. I've looked at several of the demo packages

>Chris,
> After going through several demo PCB Cad packages of all types
>and prices, I finally settled on Tango. It was not cheap by any means!
>But I found that you got what you paid for with the cheap varieties. Of
>course, I wanted to be able to do multiple sides, varied trace thicknesses
>and SMT stuff. Orcad does all that but was unbelievably high priced for
>my pocket book.
> Tango is capable of RF stuff, but you have to do some "finagling"
>sometimes to get what you want. They have a good "polygon fill" function
>that really helps, as well as arc drawing and thick traces - just about
>any thickness you want.
> Every package I tested was clearly geared for 40 pin dip
>plunking, including Tango. Also the PCB router programs seem to be the
>same. I have yet to see anything geared for RF buffs (if anyone has
>seen otherwise, please correct me!). What would be *really* nice would
>be automatic polygon fill. It takes hours of extra work to fill in all
>the empty space with ground plane.
> Sorry I couldn't give you anymore help! Maybe someone else out
>there can comment?

> Steve
> magoo871@uidaho.edu

I've used Orcad on and off for about 5 years, and I've never used any
thing else, so take my comments appropriately.
Every package has it's shortcomings, and I'm not the one who decides
which package gets purchased - I just have to learn the one that appears
on my desk the best I can, and work around it's shortcomings.

A friend of mine introduced me to Orcad years ago (it worked just fine on
on an monochrome Hercules-equipped XT, believe it or not) and I watched
him just taken the Orcad plots (4 x size) and fill in the ground
plane areas with a Magic Marker before they went to the film makers.
It takes two "layers" at 90 degrees to each other, but it's quick and
does the job.

The gerber plot files on floppy go with the HP Draftmaster plots to the
boardmakers. The prototype boards come back with ground planes. Solves

his problem!

Eventually Orcad may get some decent design input from an RF engineer and then they may add a few appropriate tweaks. Until then, the HP LJ 4 laser printer with 8.5x14" legal paper makes adequate proof prints, and the final plots on the HP Draftmaster get fillins with a marking pen.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3430. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 09:48:23 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Nov19.094823.13405@grian.cps.altadena.ca.us>
Source record: 115473

pazar@PROBLEM_WITH_INEWS_GATEWAY_FILE (Steve Pazar) writes:

>Yes, I remember playing with these things in high school. The best
>source of the high voltage transformer is an old TV set. Check out
>local garage sales, or visit a TV repair shop (if you can find one).
>The HV secondaries were typically 560 volts center tapped at 350 mA.
>You can ignore the other windings, or use them to power a 5U4 rectifier
>tube to get your DC. Come to think of it, an old TV chassis will
>probably have a heafty choke and filter caps. Beware of the old filter
>caps though because they get leaky with age. Best to buy new caps if
>possible.

>Oops...while re-reading this I realize that by HV transformer someone
>might think I'm talking about the flyback. Nope...I mean the power transformer
>for the set.

>Have fun, and be careful...you're playing with something that can KILL!

I remember seeing a flame speaker at the California Polytechnic Institute Science Fair in 1965. The student was using two standard bunsen burners, a bracket to hold a glass rod in the flame (some kind of deliberate doping of the flame to make it conduct better) and a high voltage supply - the burners were sitting on a ceramic sheet with alligator clip leads from the power supply to them, plus there were two electrodes in the flame, also feeding to the power supply. The sound was coming from a reel-to-reel tape deck and was fed to to the power supply. The student was discussing the device with my father, who fancied himself as somewhat of an audiophile - I remember that he said he had gotten the design from an electronics magazine about 2-4 years earlier. He also said that the overall system was fabulous on the highs, very poor on the lows, and I distinctly remember one comment: it had "a definite carbon monoxide exhaust problem - something my parents Jensen speakers don't have".

I agree with Steve Pazar that an old color TV is probably the cheapest place to find appropriate violtage parts - I'd look for an late 60s to mid 70s RCA, Admiral or Zenith (my first color TV was a 1965 RCA). Grab the transformer and every choke. Leave the capacitors - they will be dried out. New caps aren't a problem - the first catalog I grabbed (DigiKey at 800-digi-key) has 100uf, 400v caps at under $3.50 each, and you'll only need a couple. MCM, Mouser or the Tandy Industrial catalog are other possibilities.

Also, I agree with Steve - FOLLOW ALL THE STANDARD HIGH VOLTAGE PROCEDURES. Today's electronics, with 90% of the circuits working on 15v or less, has lulled the average experimenter into a "it won't hurt

me" mode. If you have access to one, look up the electronic safety chapter from a 1960s-1970s ARRL Radio Amateurs Handbook. Remember - it's not voltage that kills - it's the current - but for the same path thru your body, the more voltage, the more current. And it's current thru your torso (i.e. your heart) that is the most dangerous. Three acquaintances of mine were zapped dead by home projects. When you work around anything over 100v, always follow this rule: If you can see the power plug pins, it's safe to stick your nose into it AFTER you discharge the filter caps. I.e. don't just turn it off - unplug it. Then short it.

Sorry if I'm harsh about HV safety. I'm a little sensitive to it. I was almost the 4th dead ham in the same extended circle of friends - I was lucky - I only got high voltage across my thumb. Not through my heart. Remember - it's only a hobby - lets keep it a safe one.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3431. Re: mixer designs...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 16:14:03 UTC
From: abergsma@doe.carleton.ca
Message-ID: <CzIvrF.4pD@cunews.carleton.ca>
Source record: 115468

: Another approach is to use a Quad FET device. There is an incredibly
: good
: article in the latest Communications Quarterly (from CQ magazine) on FET
: mixers that have IM3 up to 54 dbm! Good luck and let me know if you
: need
: more info.

thanks, i tried to get you direct, but it was returned...i'll look into these
asap.

I'm at abergsma@doe.carleton.ca

aj

3432. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 18:31:38 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov19.183138.7514@ke4zv.atl.ga.us>
Source record: 115475

In article <kevin.jessup.129.0012F85B@mail.mei.com> kevin.jessup@mail.mei.com (Kevin Jessup) writes:
>
>Anyone else working with Analog Devices' (or anyone else's) fast ADC's
>and digitizing at the first IF stage, then demodulating using a DSP
>(with all the benefits of digital filters), and finally, going through a
>DAC to get the audio?? Do you think I could have made that sentence
>any longer?? :-))

See this month's QEX.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3433. test

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 20:06:28 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <3alls4$2f65@yuma.ACNS.ColoState.EDU>
Source record: 115469

testing.

3434. test

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 20:17:36 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <3almh0$1s93@yuma.ACNS.ColoState.EDU>
Source record: 115470

```
test
```

3435. Linear Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 20:42:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.114.546@acenet.com>
Source record: 115493

Newsgroups: rec.radio.amateur.homebrew

BH> I have a question concerning linear amps. I know that there are
BH>two different classes of amps. Class "C" and Class "AB-1". Can anbody
BH>explain the difference between the two and whcih would be a better
BH>amp for the money. This amp will also be used in a mobile. Help
BH>the confused!!!!!!

Brad, class C is the most efficient but you can only use it
for CW and FM. It is a "non-linear" amplifier clas, but develops
typically 70 to 75% efficiency or better.
Class AB1 is less efficient but can be used for SSB, AM etc.
Typical efficiency is around 45 - 55 % due to the quiescent current
that is pulled etc. There are some good books on this. I recommend
the ARRL handbook, but at $30 a pop they are not cheap (for a paperback)
Class AB1 will work for FM, CW, SSB, AM, MCW etc.

Happy homebrewing!

• SLMR 2.1a • You were right, Mom - museums CAN be fun!

3436. Re: Local TV Jammer....Ho

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 20:44:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.115.546@acenet.com>
Source record: 115494

Newsgroups: rec.radio.amateur.homebrew

EW(UT>I've had good luck with an RF sig gen tuned to either the carrier
EW(UT>or the first IF.
EW(UT>It outlawed RAP in my house :-) ie no more reception of the local
EW(UT>(c)RAP station.
EW(UT>Does TV ok too
EW(UT>Ed.

ROTFLL! I found this very amusing Terry! Reminds me of some of our
antics back in the schoolkid days!

 SLMR 2.1a Tagline For Sale.. Cheap.. Insert $1 into drive A:\

3437. Re: Mini 9V Battery Trans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 20:47:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.116.546@acenet.com>
Source record: 115495

Newsgroups: rec.radio.amateur.homebrew

BB>George Van Wagner (vanwag@netcom.com) wrote:
BB>: Look in the latest QST (Nov.). They have a construction project for a 9
BB>: volt powered QRP transciever for 40 and 80 meters.

BB>Sounds interesting. Without access to QST, how might I obtain a copy of
BB>this article?

BB>Bill B.
BB>bblohm@hpbs1686.boi.hp.com

Uh! Which one of these addresses that you are using is the
real correct one?

bblohm#boi.hp.com

OR

bblohm@hpbs1686.boi.hp.com
?????

He he Bill, I guess you could wait a month and go see if they carry it
at your local library, or go to the nearest ham store and look
at the magazine. You could write down the address of the company that
sells the kit too and just order it.

• SLMR 2.1a • YUPPIES: Yes Under Peer Pressure I Eat Sushi.

3438. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-19 21:35:55 UTC
From: dmiller@crl.com
Message-ID: <3alr3r$3p3@crl9.crl.com>
Source record: 115476

James D. Cronin (jdc@cci.com) wrote:

: I'm looking for a couple Mini-Circuits SBL-1H's to build the
: VHF transverters from the ARRL Handbook. There are enough
: companies that carry the SBL-1, but not the -1H version.

: Any ideas on where to find this beastie?

I'm pretty sure that you can get small quantities of parts directly
from mini-circuits. I know that their ads often list 1-9 pricing.

--

Don Miller My opinions are my own!
dmiller@crl.com

3439. Flyback Transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 07:08:46 UTC
From: gt@ramsey.cs.laurentian.ca
Message-ID: <3amslu$ake@ramsey.cs.laurentian.ca>
Source record: 115471

Of all the goups I have access to, this seemed to be the most appropriate one to post this too - homebrew experimenters are most likely to know where to get electronic parts, and I understand that many amateur radio operators experiment with broadcasting video as well as radio.

I need to find a supplier of generic flyback transformers for crt's. I have a computer monitor with a dead flyback (horizontal output) transformer, and since the manufacture of the monitor is out of business, the only way I'll find one will be from a flyback manufacture with a good cross-reference list. ... any ideas?

George Townsend
Manager DCS
Algoma University
gt@thunderbird.auc.laurentian.ca
gt@ramsey.cs.laurentian.ca
-gt-

3440. Minisport Laptop Hacker #25

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 08:37:48 UTC
From: bmork@comtch.iea.com
Message-ID: <3an1ss$imb@krel.iea.com>
Source record: 115474
Cross-posted to: comp.sys.zenith,comp.sys.laptops,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

MiniSport Laptop Hacker (TM) - Vol #25. November 1994
To discourage pecuniary interests, Copyright (c) 1994 Brian Mork

>>> ADMIN
Any votes for an index issue yet? Compendiums of all issues are available from ftp.cs.buffalo.edu as \pub\ham-radio\mlhackXX.zip, or on SimTel archives (eg. oak.oakland.edu) as \SimTel\msdos\packet\mlhackXX.zip. The XX in the filename indicates the last issue number, and replaces the previous convention of using mlhacker.zip for all compendiums.

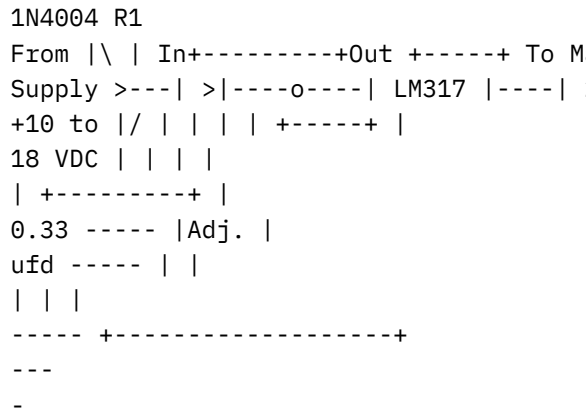
>>> CUSTOM BATTERY CHARGER.
Last issue, I concluded Jim Harvey's description of how he made a custom battery pack using a power drill battery. Now he's built a dedicated charger unit and found a replacement for the expensive Li batteries. What a job, Jim! Others, read on!

"My ZL-2's heritage is Garage Sale. It came with neither battery or charger. I was able to obtain batteries for a reasonable price but Surplus Communications in St. Joseph wanted $70 for a Zenith charger, too much for a Garage Sale computer. For a year I have been unscientifically trickle charging the batteries with a CB radio power pack connected through a 47 ohm resistor.

"I found several state of the art NiCad charger circuits in QST and other magazines. Most depended on a tiny droop in battery voltage near the end of the charge cycle. I wanted to leave the battery in the computer, though, and the 600 milliamp current surge when turning on the machine would surely confuse the chip. One of the references I checked showed simple constant current charge circuits based on the LM317 adjustable voltage regulator(1). The schematic could not be simpler. Two parts! Figure 1 has added a recommended protection diode and a bypass capacitor to bring the parts count up to four.

The way this circuit works is: The LM317 will do it's level best to keep the voltage difference between its output and adjust terminals at exactly 1.25 volts. This will be the voltage dropped across R1 by a current of 1.25/R1 amps. The 2.3 ohm value was obtained by paralleling two 4.7 ohm half watt resistors (at least one watt is needed). This gives a regulated current of about 530 ma, sufficient to operate the Minisport with a little left over to charge the battery.

Fig. 1 Basic Constant Current Regulator I = 1.25/R1 = 530 ma.

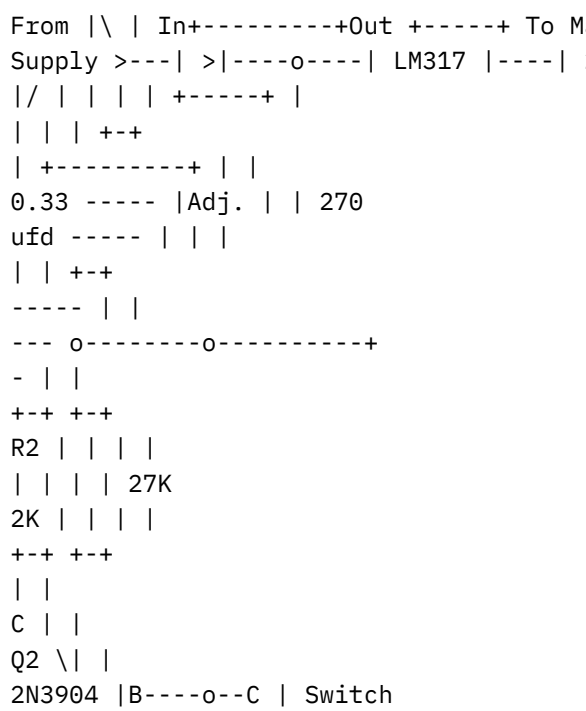


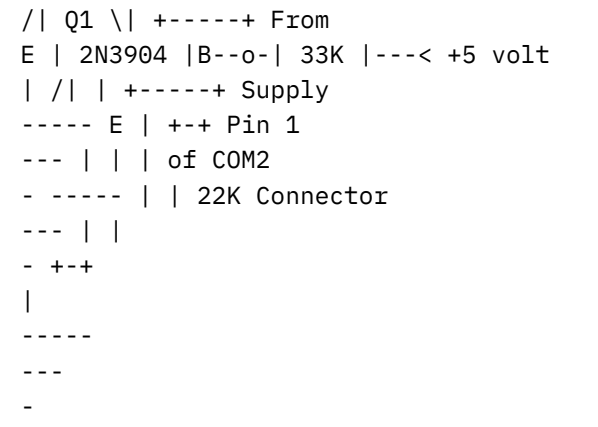
What was really needed was a circuit that would pass enough current to run the computer when it was operating, but would cut back to a traditional 0.1C charge rate when the machine was off. I added the two transistor circuit shown below in figure 2.

The switch lead is connected to the Minisport's internal 5 volt power supply; I obtained this from pin 1 of the internal modem connector (see MLH #8). When the computer is off, this is at a few tenths of a volt above ground. Q1 is cut off, which allows Q2 to conduct. Current flow through the 270 ohm resistor increases the voltage seen by the LM317 adjust terminal and the regulator decreases the current. The 2000 ohm value of R2 allows an output of about 160 milliamps.

When the Minisport powers up, the 5 volts supplied to the switch sense lead causes Q1 to conduct which in turn cuts off Q2. The LM317 then operates as in Figure 1.

Fig. 2 Modified Current Regulator With Trickle Charge Switch





"I assembled the components on a piece of perf board which slides into the internal modem slot of the Minisport. It's wired directly into the main battery terminals at the motherboard. The LM317, for heat sink purposes, is bolted to the metal bottom plate with a mica insulating washer underneath and a nylon screw (the tab of the LM317 is connected to the output terminal.) I epoxied a 2.5 millimeter barrel type power socket into the phone jack hole of the modem slot cover to connect the external DC charger supply (a 14 volt 2 amp switcher, another Garage Sale acquisition). The charger could just as easily be built in an external box. You would need a 3 wire connector to bring out the 5 volt switch sense lead though.

"The LM317 current limited charger will happily run the computer from an auto cigarette lighter socket. You should put an inductor in series with the lead and use an MOV surge suppressor to protect the machine from the relatively dirty auto voltage as discussed in MLH #12 and #21.

"Another improvement made while I had the Minisport disassembled was to discard the expensive coin cell backup batteries and functionally replace them with a set of small NiCads tucked in the modem compartment. There are several cordless phone batteries that can be fitted into the space. You need five NiCad cells for the necessary 6 volts, use thin wire wrap wire to carry the current over to the terminals on the edge of the motherboard adjacent to the coin cell compartment. To keep the new backup battery topped off I connected the positive side to the new charger input jack through a 1000 ohm resistor. This will allow somewhat less than 10 milliamps to trickle in which is reasonable considering the limited duty cycle of the backup system. It is only in use while the main battery is being changed or is completely discharged.

"(1) Engineer's Notebook - Integrated Circuit Applications, 1980 Edition, Forest H. Mims, (C) Radio Shack. [BjM: I use a similar, simple circuit to drive my laser diode experiments. It works well.]

Please provide feedback! * Direct data 1-509-244-9260
* ARO Net KA9SNF@ka7fvv.#ewa.wa.usa
* Internet bmork@opus-ovh.spk.wa.us
73, Brian * 6006-B Eaker, Fairchild, WA 99011

3441. 40-40 QRP Rig in 11/94 QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 10:59:02 UTC
From: desk@rtd.com
Message-ID: <desk.3.000AFC39@rtd.com>
Source record: 115480

I am taking a close look at the 40-40 QRP rig just published in 11/94 QST as a project for myself and a buddy. We are both new hams and hold Tech+ tickets. We want to build something inexpensive that we can use to practice code and operating techniques over the distance between our apartments which is about 5 miles. I would sure appreciate a little advice before I shell out $100 for a couple of kits. Some initial questions I have are as follows:

(1) The article states that the design's band coverage on 40 meters is about 40 kHz covering the subband most used by QRPers. None of the band plans I have accumulated to date point to a 40-meter subband labeled "prefered for QRP operation." Where is this subband considered to be?

(2) As Tech+ operators we are restricted to using the 7.1-7.15 MHz subband on 40 meters. If the QRP subband alluded to in the article does not intersect 7.1-7.15 MHz I assume we will have to modify the VFO circuit in this design to bring operation within the 7.1-7.15 MHz subband. Would the proper way to do this be to adjust the value of C9 until the VFO will tune across 7.1-7.15 MHz and then restrict the dc swing of R1 so that the VFO will not provide tuning outside 7.1-7.15 MHz?

(3) I do not know how to go about calculating the impedence that this design will present to a transmission line/antenna. Is it 50 ohms? How might I go about calcuating it?

(4) Any suggestions concerning antennas? For our purposes small=good. Indoors=excellent. I realize 40 meters isn't exacly rubber ducky wavelengths and we've only got QRP levels to work with but then again, we are only intially after communication at a 5 mile range. Is this feasible?

(5) Kits for the 40-40 are available from an outfit called Small Wonder Labs in Newington, CT. Anyone done business with this supplier? Are their kits OK? Are they OK?

I would surely appreciate any input/ideas you would care to share. I would also be interested in hearing the experiences of anyone building/operating these little rigs. 73... KC7FSA.

3442. Henry 2002-A Manual

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 15:19:54 UTC
From: hbrown@nadir.resd
Message-ID: <1994Nov20.151954.29828@knight.vf.ge.com>
Source record: 115482

I need the manual or at least the schematic for the power supply/control circuitry for a Henry 2002-A amplifier.

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3443. Cable TV channel 18 TVI from 2 mtrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 16:20:26 UTC
From: Ken Lotts <klotts@primenet.com>
Message-ID: <3ant0a$lji@news.primenet.com>
Source record: 115479

I interfere with cable ch 18 when operating 2 mtrs (Packet)..

I called the cable co. and discovered that ch 18 = the 2 mtr band..

What to do?

Ken (aa7jc)

3444. Re: Cable TV channel 18 TVI from 2 mtrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 19:00:14 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <3ao6bu$agm@nntp.Stanford.EDU>
Source record: 115481

In article <3ant0a$lji@news.primenet.com> Ken Lotts <klotts@primenet.com> writes:
>I interfere with cable ch 18 when operating 2 mtrs (Packet)..
>
>I called the cable co. and discovered that ch 18 = the 2 mtr band..
>
>What to do?
>
>Ken (aa7jc)

There is not much you can do other than not feel guilty about it.
This is entirely the problem of the cable company. Don't let them
convince you otherwise.

In some communities, CATV ch-18 goes unused because enough radio
amateurs complain of harmful interferance from the cable company!

Try tuning in 145.25 MHz, this is the video carrier frequency for
CH 18. If you hear a strong carrier there, sometimes with a 60Hz
buzz, this indicates that your neighborhood cable is leaking RF
and is also susceptable to RF ingress from the outside world.
Tell the cable company to fix it and remind them of their legal
responsiblility to do so.

Good Luck,

Steve Muther WF6R stevem@w6yx.stanford.edu
stevem@nad.3com.com

3445. Re: Non-linear Eq'n plotter WANTED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 20:21:21 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <CzL1vM.5nE@wb6hqk.ampr.org>
Source record: 115490

In article <39q2g3$nul@infa.central.susx.ac.uk>,
Sylvan Katz <sylvank@central.susx.ac.uk> wrote:
>I am looking for a Public Domain Software package that will allow me to
>input a non-linear equation (say the logistic equation) and the
>parameter(s) domain and initial condition. The output from the package
>must be both numerical and graphic. Graphics is of the utmost importance.

Gnuplot is a very nice equation plotting package with the capability of
plotting equations or datafiles. It does a good job with 3-D data and
also has a contour plotting mode. It's public domain and available for ftp
in source form or ready to run as a PC exe file. I don't have ftp
capability here and don't know where to get it.

>
bart

bart@wb6hqk.ampr.org

3446. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 21:05:50 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3aodne$1d4@maple.enet.net>
Source record: 115483

> The first I heard of them was in about 1976. Popular Electronics ran
> some construction articles.
>

Actually, it was earlier than that. My best friend in high school won an award for his flame speaker project in May 1970, and he had followed a Popular Electronics article from a year or two earlier. I have been looking for that magazine for years, and haven't scored it yet, but I am close to 100% certain it was from 1965-1968. If anyone has any of those old mags, it would be worth a little flipping to let the rest of us know when it ran.

Art's project, if I recall, used a guitar amp to modulate a high voltage source. Making the flame conduct steadily was the #1 engineering problem. We could sprinkle salt into the flame or atomize brine into it, but we had no luck finding a wick that wouldn't burn to nothing in that fierce propane flame. (I thought of an asbestos wick but never scored any asbestos, which was probably just as well.)

I would love to duplicate the experiment now, but I have never found the original article. If someone reading this knows what issue it's in, please post.

--73--

--Jeff Duntemann KG7JF
Scottsdale AZ

3447. Homebrew Tube Transmitters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 21:14:21 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3aoe7d$1h4@maple.enet.net>
Source record: 115484

People still build and operate homebrew tube rigs. I finished one about a month ago for 40/80M, using a 6T9 Compactron tube, which is a combination triode/power pentode in one envelope. The circuit came out of (I think) the 1975 edition of UNDERSTANDING AMATEUR RADIO, and it works pretty well. I get about 8 watts output and about 15 watts input. This is pushing the tube pretty hard, but the duty cycle is short enough to prevent damage.

Tubes are by no means scarce; in fact, they're a glut on the market as long as you're not looking for anything exotic. The real problems are things like Miniductor stock and to a lesser extent variable caps. I buy parts easily through the mail and go to 3-4 hamfests a year, and my junkbox is better now than it was when these things were supposedly "easy to find."

The journal to read for building tube rigs is ELECTRIC RADIO, a small monthly catering to AM, tube rigs, and vintage ham gear collecting. They also publish "new designs" for tube rigs, and are a good source of leads on parts. It's published out of Aurora, Colorado by Barry Wiseman (forgot his call; but he should be locatable in the searchable call books by last name) and it costs about $30 a year for 12 issues.

I encourage you to give it a shot; I like transmitters that buzz, glow, and bulk out to more than a cigarette pack.

--73--

--Jeff Duntemann KG7JF
Scottsdale AZ

3448. Re: 40-40 QRP Rig in 11/94 QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 21:38:05 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3aofjt$1p3@maple.enet.net>
Source record: 115485

>
> I am taking a close look at the 40-40 QRP rig just published in 11/94 QST
> as a project for myself and a buddy. We are both new hams and hold Tech+
> tickets. We want to build something inexpensive that we can use to practice
> code and operating techniques over the distance between our apartments which
> is about 5 miles. I would sure appreciate a little advice before I shell out
> $100 for a couple of kits.

I just received the *other* QRP project in the 11/94 QST, the Spider Junior transceiver. It's cheaper and looks easier to build than the other one. (I'm going to assemble it tonight.) The company sent it to me very quickly, and it was only $34 if I recall.

About the only CW I ever do anymore is in the 40M novice band, and I have no trouble making contacts across the state and sometimes across the continent with 1W. My antenna helps; it's a 190 foot longwire worked against a good (for Arizona at least) ground.

One trick that I used to good effect as a kid was to string a "clothesline" across the backyard out of rubber-insulated stranded wire with a cotton overjacket. Doesn't look like an antenna but I did a LOT with it. Put your station in the basement close to the point where a metal cold-water pipe comes through the wall and you'll have the best ground you can get without tearing up the place.

You'll need to tune a longwire with something. A T-network consisting of a roller inductor and a 365 pf variable cap works well. Finding the roller inductor without paying $90 or so for it is the trick. Go to any hamfest within reach and eventually you'll find one. You can order a new one from Ocean State Electronics, but they cost like hell.

Good luck with it. If you get frustrated with 1W output, look into making a class-C power amp from one of those MRF531 MOSFETs that you can buy for a couple of bucks. If you have a 28V supply you can get 15 watts out of one of those; less from 13V. I believe the various ARRL QRP books have circuits galore. QRP Classics is the best one, but W1FB's QRP Notebook is also good.

--73--

--Jeff Duntemann KG7JF
Scottsdale AZ

3449. Re: Flame Speaker Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-20 22:50:13 UTC
From: jimn0oct@aol.com
Message-ID: <3aojr5$b9r@newsbf01.news.aol.com>
Source record: 115477

In article <3aodne$1d4@maple.enet.net>, Jeff Duntemann
<jeffd@coriolis.com> writes:

Ah, now I have a much better idea of what is going on. Say, if solutions
can be aspirated into ICP and AA spectrophotometers, why not your
speaker?? use a high enough velocity flame, and aspirate the appropriate
ion solution into the flame without cooling it significantly..
Really easier than it sounds. In fact, I may have some old parts for
it......

73, jim

3450. Re: Linear Amps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 02:42:37 UTC
From: JWRS73A@prodigy.com
Message-ID: <3ap1et$tvi@usenetw1.news.prodigy.com>
Source record: 115486

>
>Hello All,
> I have a question concerning linear amps. I know that there are
>two different classes of amps. Class "C" and Class "AB-1". Can anbody
>explain the difference between the two and whcih would be a better
>amp for the money. This amp will also be used in a mobile. Help
>the confused!!!!!!
>
>Thanks in Advance!!!
>Brad

****
Brad,
The short answer is that a linear amplifier running Class A, AB-1, or B
Push-Pull can be used for all of the modulation types (ie. AM, FM, SSB,
CW,
RTTY, and digital modes, etc.) Since they are less efficient, they tend
to be bigger, run hotter, and use more power supply power than the more
efficient Class C amplifiers.

However, since the Class C amplifiers are *not* linear, they will not
faithfully pass any modulation schemes that vary the amplitude in a
continuous fashion. Class C can only be used for FM, CW, and the digital
modes.

If the output power requirements are low, say within 100W, a mobile
class
AB-1 amplifier will be your best bet. If your are going to use SSB, or
AM, you have no choice.

Good Luck

-
DUDLEY CHAPMAN JWRS73A@prodigy.com

Life is better at 60 mph and 35 wpm - WA1X/m

3451. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 02:48:55 UTC
From: JWRS73A@prodigy.com
Message-ID: <3ap1qn$22ou@usenetw1.news.prodigy.com>
Source record: 115487

>
>
>Anyone else working with Analog Devices' (or anyone else's) fast ADC's
>and digitizing at the first IF stage, then demodulating using a DSP
>(with all the benefits of digital filters), and finally, going through a
>DAC to get the audio?? Do you think I could have made that sentence
>any longer?? :-))
>
> || _____ || kevin.jessup@mail.mei.com (

****
****

Kevin,

I have been messing around with Dual Conversion where the 2nd IF is at
close to audio frequencies. That way I can use CD quality ADCs that
don't cost very much.

ADCs that can run at IF speeds and have the dynamic range necessary for
good rx work, require you to hock you first born child to affort them.
Otherwise, yes, you get good digital filters out of the bargain.

-
DUDLEY CHAPMAN JWRS73A@prodigy.com

Life is better at 60 mph and 35 wpm - WA1X/m

3452. Re: 40-40 QRP Rig in 11/94 QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 04:28:37 UTC
From: dwebster@netcom.com
Message-ID: <dwebsterCzLoFq.9Gr@netcom.com>
Source record: 115489

Bob Keller (desk@rtd.com) wrote:

: I am taking a close look at the 40-40 QRP rig just published in 11/94 QST
: as a project for myself and a buddy. We are both new hams and hold Tech+
: tickets. We want to build something inexpensive that we can use to practice
: code and operating techniques over the distance between our apartments which
: is about 5 miles. I would sure appreciate a little advice before I shell out
: $100 for a couple of kits. Some initial questions I have are as follows:

Some answers I hope:

1) The qrp calling frequencies are 40khz up from the band edge (cw)
except 20 meters where it is 60. In the novice/tech portions it is 10khz
up, ie. 7.110.

2) I don't think you'll have any problem moving the frequency up on the
40-40, although it might involve removing a turn from a toroid.

3) A low antenna is useful for close in work (less than a 1/4 wavelength
high). Normally however the higher and longer the better, but you are
only talking 5 mi. A tapped coil such as miniductor and a variable
capacitor will make an inexpensive L network for matching a random wire
antenna.

4)Small Wonder is owned by NN1G who designed the radio for the Qrp club
of New England. A bunch have been made by them. I would have no reason
to think he would be unreliable.

5)Another great little radio is the Norcal 40 by the Norcal QRP club.

Hope this has been some help.

--
Dennis Webster WJ6H/QRP
dwebster@netcom.com

3453. Re: 40-40 QRP Rig in 11/94 QST

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 04:29:05 UTC
From: n1ist@netcom.com
Message-ID: <n1istCzLoGH.H5A@netcom.com>
Source record: 115488

In article <desk.3.000AFC39@rtd.com> desk@rtd.com (Bob Keller) writes:
-
- I am taking a close look at the 40-40 QRP rig just published in 11/94 QST
- (1) The article states that the design's band coverage on 40 meters is
-about 40 kHz covering the subband most used by QRPers. None of the band plans
-I have accumulated to date point to a 40-meter subband labeled "prefered for
-QRP operation." Where is this subband considered to be?

Traditionally, QRP operation is at 7.040 MHz (3.579 MHz on 80M)

- (2) As Tech+ operators we are restricted to using the 7.1-7.15 MHz subband
-on 40 meters. If the QRP subband alluded to in the article does not intersect
-7.1-7.15 MHz I assume we will have to modify the VFO circuit in this design to
-bring operation within the 7.1-7.15 MHz subband. Would the proper way to do
-this be to adjust the value of C9 until the VFO will tune across 7.1-7.15 MHz
-and then restrict the dc swing of R1 so that the VFO will not provide tuning
-outside 7.1-7.15 MHz?

C9 does't have a wide enough range to move up to 7100. You will have to
remove a few turns (one at a time) to bring it up there (but you will have
to do this anyway, since it runs around 6800 the first time you fire it up).
You can pad the tuning pot with a resistor or a trimmer to reduce its range.
If you can find one, use a 3 or 10 turn pot for the tuning control - it works
much better...

- (3) I do not know how to go about calculating the impedence that this
-design will present to a transmission line/antenna. Is it 50 ohms? How might I
-go about calcuating it?
- (4) Any suggestions concerning antennas? For our purposes small=good.
-Indoors=excellent

The 40-40 has a 50 ohm output. As far as antennas go, of course, large
and outdoors is better :-). AA1IZ had some good luck with a hamstick
and a 1/4 wave radial on his 40-40, and WX1G has used his indoor longwire.

- (5) Kits for the 40-40 are available from an outfit called Small Wonder
-Labs in Newington, CT. Anyone done business with this supplier? Are their kits

Small Wonder is Dave Benson's (NN1G) company, so I would trust them. They
also have this radio for other bands (20, 30, 40, 80 and possibly 160).
The Boston ARC has built a few in our kit-building workshop. They are
nice kits to build, not too complicated, and all worked the first time,
except one that had a solder bridge. For tuneup, I used an MFJ antenna
analyzer as a signal generator to get the VFO on frequency. Any adjustable
6-7.5 MHz oscillator with a counter or calibrated scale will do. A scope
was nice to tune up the transmitter.

BTW, they have a *great* reciever!

72,
/mike

--
\|/ Michael L. Ardai N1IST Teradyne ATB, Boston MA
-*- ---
/|\ ardai@maven.dnet.teradyne.com n1ist@netcom.com

3454. SWITCHING PSU chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 10:21:06 UTC
From: whiting@Cadence.COM
Message-ID: <CzM4r7.8Dx@Cadence.COM>
Source record: 115499

Hi,

I have been experimenting with a switched-mode PSU for a TWT
PSU, using SG/LM3525 controller chips. These chips seem to be
old technology - I would like to find something more recent
to do the job. Any ideas?

Requirements:
- drive push-pull MosFets directly (most chips are single ended)
- SMD version available
- must be possible to synchronise osc. frequency (there are
3 separate switchers in the PSU and I don't want heterodynes).

73

Neil, G4BRK

| Email: whiting@cadence.com |

3455. Cross-Field Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 12:59:55 UTC
From: Anders.Fongen@saga.telemax.no
Message-ID: <Anders.Fongen.55.000D0006@saga.telemax.no>
Source record: 115491

Hello,

I have heard about something called Cross-Field Antenna (CFA), but need more info about it, and how this can be built. Can anyone help me with info?

Best regards,
Anders Fongen, LA6UIA

3456. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 13:27:19 UTC
From: kevin.jessup@mail.mei.com
Message-ID: <kevin.jessup.140.00B7B219@mail.mei.com>
Source record: 115516

In article <3atdjo$av4@longwood.cs.ucf.edu> clarke@longwood.cs.ucf.edu (Tom Clarke) writes:

>>ADCs that can run at IF speeds and have the dynamic range necessary for
>>good rx work, require you to hock you first born child to affort them.
>>Otherwise, yes, you get good digital filters out of the bargain.

Yes. There was an article in Electronic Design magazine that described an Analog Devices 21 MHz sampling ADC used for just this purpose. They also discussed the Steinbrecher mini-cell (fantastic).

I'm still waiting for my free sample of the ADC from a local vendor. When he asked what my potential use was and how many I'd be using per year, I had to tell the truth: just a pet project. I think I'm on the bottom of the free sample list. Oh well.


```
P A R A D I S E * *
TAR & ASPHALT * * * *
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|| _____ || kevin.jessup@mail.mei.com (
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"Paving paradise and putting up parking lots."

3457. Re: Cable TV channel 18 TVI from 2 mtrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 14:15:51 UTC
From: randolph@est.enet.dec.com
Message-ID: <3aqs23$dtv@mrnews.mro.dec.com>
Source record: 115509

In article <3ant0a$lji@news.primenet.com>, Ken Lotts <klotts@primenet.com> writes...
>I interfere with cable ch 18 when operating 2 mtrs (Packet)..
>I called the cable co. and discovered that ch 18 = the 2 mtr band..
>What to do?
>Ken (aa7jc)

Nothing. Or maybe call the FCC and complain about their signal leakage. If you can get in, they can and probably do leak out. You are not obligated to do anything, since cable TV is supposed to be closed to external RF. Make sure you don't have any questionable taps into the cable or funny decoder boxes that might be leaky before you do any of this.

-Tom R. N1OOQ randolph@est.enet.dec.com

3458. Finding old magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 14:41:04 UTC
From: mack@mails.imed.COM
Message-ID: <9410217854.AA785440254@mails.imed.com>
Source record: 115492

I guess they don't teach how to use the library any more.

There is a book (or some such) at almost ALL public libraries which will allow you to search by title and/or subject. Just ask the librarian for help. They can almost always get photo copies of old magazine articles from some magical place. Almost everything ever published is on microfilm somewhere.

Ray Mack
WD5IFS
mack@mails.imed.com

3459. Cable Channel 18 Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 14:47:47 UTC
From: mack@mails.imed.COM
Message-ID: <9410217854.AA785440555@mails.imed.com>
Source record: 115498

IF you are interfering with your own TV you are out of luck. It is probably a cheap TV. Throw it away (or give it to the kids).

HOWEVER, if you are interfering with your neighbors AND it is getting in through the cable, you should call the service manager of the cable company and POLITELY request that they fix THEIR cable system. If you get no response in 2 days, call him back and don't be polite this time. Tell him he has 2 days to get it fixed or you will make a formal complaint to the FCC.

The FCC is getting VERY nasty with cable operators these days. There are very specific limits for leakage from a cable system with BIG fines for non-compliance. Threatening FCC action _should_ get very fast action.

Ray Mack
WD5IFS
mack@mails.imed.com

3460. :Schematics for an amplif

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 15:21:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.126.546@acenet.com>
Source record: 115507

Newsgroups: rec.radio.amateur.homebrew

DB>Could anyone pair me up with a schematic to boost the transmitting
DB>power of a citizen's band radio?

Not legally!!

DB>I'm not too well versed in all
DB>of this fun stuff, but any help you can offer would be great.

Get into amateur radio! There you can run 2000 watts
on CB you are limited to no more than 4 watts maximum.

DB>Also, if you know, what is the legal maximum transmitting power a person
DB>can legally utilize? If it varies by state, I'm in Mississippi.

Dave, the same is true in any state. CB is a very disappointing and
limited form of radio usage. Go for an amateur radio license.
You will have loads of fun and never regret it!

 SLMR 2.1a Refuse novocaine - transcend dental medication!

3461. Standoffs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 16:35:11 UTC
From: meh@cbsms1.cb.att.com
Message-ID: <CzMM2p.DH8@nntpa.cb.att.com>
Source record: 115496

Hello All

Need some information on what is a good idea for standoffs in homebrew projects. I am currently working on a single board transceiver, and got to wondering if there was anything at RS one could buy, but better yet would be something laying around the house that could be put into service.

Marty

--


```
**************************************************************************
-===- _______ _______ Martin (Marty) Hartwell
~~======= /\ |__ __| |__ __|
~~~~~~~~~~ / \ | | ___ | | Room 3D286A
=~~~~~~~~~~ / /\ \ | | / \ | | 6200 E. Broad St.
=~~~~~~~~~~ / /__\ \ | | \ (\/ | | Columbus, Ohio
==~~~~~~~~~ | __ | | | / \__| | Phone: (614) 860-2091
==~~~~~~~~~ | | | | | | (\/ /| | Amateur Radio Station KD8BJ
========= |_| |_| |_| \_____\|_| Email meh@cbsms1.cb.att.com
-===- ICBM: 39 58 N 82 49 W
**************************************************************************
```

3462. Re: Cross-Field Antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 17:22:34 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3aql0q$1ma6@info2.rus.uni-stuttgart.de>
Source record: 115500

>I have heard about something called Cross-Field Antenna (CFA), but need more
>info about it, and how this can be built. Can anyone help me with info?

Anders,

Don't pursue this, because the CFA does not work. (well at least
not better that a bare coax plug). The design was published in a magazine
called Electronics World (formerely Wireless World).

73, Moritz DL5UH

3463. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 17:28:28 UTC
From: djwang@nmrsg.biophys.upenn.edu
Message-ID: <3aqlbs$8m7@netnews.upenn.edu>
Source record: 115497

I believe you can order them directly from Mini-Circuits.
Their Phone # are:
800-654-7949
718-934-4500
73 D.J. N2YKP

3464. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 18:02:35 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3aqnbr$2c82@yuma.ACNS.ColoState.EDU>
Source record: 115501

The SBL-1H is not listed in any of the M.C. catalogs I have (93's and 94's).
They do list the SRA-1H (17dBm LO, 10dBm RF) and the SBL-173H (same levels).

Mini-Circuits has a $50 minimum order.

Galen, KF0YJ

3465. Re: Finding old magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 20:36:37 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CzMx92.Eo1@freenet.buffalo.edu>
Source record: 115502

In a previous article, mack@mails.imed.COM () says:

>I guess they don't teach how to use the library any more.
>
>There is a book (or some such) at almost ALL public libraries which will allow
>you to search by title and/or subject. Just ask the librarian for help. They
>can almost always get photo copies of old magazine articles from some magical
>place. Almost everything ever published is on microfilm somewhere.
>
>Ray Mack
>WD5IFS
>mack@mails.imed.com
>

Not always that simple... QST is indexed in the Science and Technology
Index (perhaps the "book" you had in mind) and also on CD ROM (which is
much easier to use)... but, CQ, 73, and probably many others are not
indexed anywhere that I know of. So... if one wants to do an intensive
search on a given topic he can be up the creek without a paddle !!!
Kurt, n2tte
--

3466. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-21 20:44:08 UTC
From: aa450@freenet.buffalo.edu
Message-ID: <CzMxLK.FDu@freenet.buffalo.edu>
Source record: 115503

In a previous article, galen@picea.CFNR.ColoState.EDU (Galen Watts) says:

>Mini-Circuits has a $50 minimum order.
>
>Galen, KF0YJ

Thats what the catalog says... but,
not always... they tend to be flexable. Talk to them.

Kurt, n2tte
--

3467. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 02:08:36 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Nov22.020836.11809@ultb.isc.rit.edu>
Source record: 115504

Thanks for the replies. I goofed on the number; it's a SRA-1H.
Time to order...

73...Jim N2VNO

3468. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 03:03:07 UTC
From: jsoft@MCS.COM
Message-ID: <3arn1b$3ef@Mercury.mcs.com>
Source record: 115505

Converting the last IF to 25Khz has been done for years by
the premier receiver designer - CEI/WJ....

--Joe Jesson

3469. Re: Standoffs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 04:22:29 UTC
From: n1ist@netcom.com
Message-ID: <n1istCznItI.CI@netcom.com>
Source record: 115506

In article <CzMM2p.DH8@nntpa.cb.att.com> meh@cbsms1.cb.att.com (Martin E Hartwell x2091) writes:
-Need some information on what is a good idea for standoffs in homebrew
-projects.

Sure. Take a ball-point pen (like a BIC) and remove the ink cartridge.
Then cut the tube to the right lengths. Either that, or use three nuts
on each screw.
/mike

--
\|/ Michael L. Ardai N1IST Teradyne ATB, Boston MA
-*- ---
/|\ ardai@maven.dnet.teradyne.com n1ist@netcom.com

3470. Re MCL mixer sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 04:50:39 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Nov21.235039.16769@wb3ffv.wb3ffv.ampr.org>
Source record: 115421

Good luck trying to go through a distributor which carries MCL. I don't know if this is typical, and perhaps not, but this is my experience--I called a local distributor a few years back which carried them, and when he realized I was calling to buy some things for myself, not for the government entity I was with at the time, his tune changed entirely and refused to have anything more to do with me. He referred me to a regional MCL-stocking distributor; I called them, and even when I acknowledged that I would have to go with their minimum order, they were very discouraging and disinterested, and essentially did everything in their power to make me forget about ordering from them. I hope your experiences in getting MCL products are better; I have never dealt directly with the company itself; they may be more amenable to smaller orders (ie, under $100) than some of the distributors. Good luck.

3471. 40-40 QRP Rig in 11/94 QS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 12:57:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.163.546@acenet.com>
Source record: 115443

Newsgroups: rec.radio.amateur.homebrew

Bob Keller writes:

BK> (1) The article states that the design's band coverage on 40 meters is
BK>about 40 kHz covering the subband most used by QRPers. None of the band plan
BK>I have accumulated to date point to a 40-meter subband labeled "prefered for
BK>QRP operation." Where is this subband considered to be?

Generally you will find 90% of them around 7040 kHz plus or minus a few
kHz es. However, as a Tech Plus you will find plenty of QRP stations
in the 7.1 - 7.15 MHz range too. Don't worry. You can run QRP anywhere!

BK> (3) I do not know how to go about calculating the impedence that this
BK>design will present to a transmission line/antenna. Is it 50 ohms?

Should be. That is the standard.

BK> (4) Any suggestions concerning antennas? For our purposes small=good.
BK>Indoors=excellent. I realize 40 meters isn't exacly rubber ducky wavelengths
BK>and we've only got QRP levels to work with but then again, we are only
BK>intially after communication at a 5 mile range. Is this feasible?

You need a dipole - 65 feet fed at the center with 50 ohm coax cable
or 75 ohm would do.
Hope it works out well for you. I LOVE 40 meters!

 SLMR 2.1a McBorgs - Over 26 billion assimilated!

3472. Hookup Radio Audio Out to Scanner - help!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 15:07:24 UTC
From: starin@netcom.com
Message-ID: <starinCzoCoC.1nL@netcom.com>
Source record: 115508

Before I go ahead and blow up my modem through experimentation, I thought I'd ask the gurus in this group if they know how to connect a radio tape out plug to the input of a modem. Any ideas?

thanks
--
Jeffrey
{New York}

3473. Finding QST int the USA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 15:17:03 UTC
From: mack@mails.imed.COM
Message-ID: <9410227855.AA785528580@mails.imed.com>
Source record: 115510

Gents:

For those of you who don't have subscriptions to QST, they have FINALLY started to ship it to news stands. It is a slightly different version than what subscribers get (the cover for sure is different!). The November issue should still be on news stands for the next week if any are left!

Oddly enough I can get it at the local supermarket! You could also try B.Dalton or Bookstop bookstores in most malls.

Ray Mack
WD5IFS
mack@mails.imed.com

3474. SWITCHING PSU chips

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 16:02:07 UTC
From: mack@mails.imed.COM
Message-ID: <9410227855.AA785531567@mails.imed.com>
Source record: 115511

Neil, G4BRK wrote:

"I have been experimenting with a switched-mode PSU for a TWT
PSU, using SG/LM3525 controller chips. These chips seem to be
old technology - I would like to find something more recent
to do the job. Any ideas? "

Neil:
First let me answer your question and then I'll give my opinion. The
manufacturers that I am familiar with that have newer designs are Maxim and
Linear Technology. Both should have newer proprietary designs that will meet
your needs, but I am not familiar with any.

The 352x series of switching regulators has been around for quite a
while and shows no signs of becoming obsolete! There really isn't a whole lot
that has changed in switcher technology except the higher frequency capabilities
in the last 15 years. If you consider that the LM723 (which is arguably the
WORST linear regulator and also the oldest) is _still_ used in NEW designs, you
should feel fairly comfortable using the 3525 if it otherwise meets your
requirements. The only requirement I see from your post that may be difficult
is SMD. This is a power device and may not be available in SMD.

This chip family is available from just about all linear manufacturers
(Motorola, National, SGS Linear Technology, Phillips, and probably many others).
There is a whole series 3524 through 3527 with slightly different capabilities.
It is used in millions of power supplies so it is not likely to go away soon.

I know this sounds a little preachy (and it is!), but why do you HAVE
to have sync'ed oscillators? If you build your switcher CORRECTLY, there will
be nothing coming out of the supply but DC. (Well OK there will be a little bit
of ripple, but a good design should minimize this!) The ripple should be so
small, and your circuits should be designed to eliminate any power supply
ripple.

The company I work for WASTED many tens of thousands of dollars on a
supply design that had to be sync'ed to the clock of a CPU so they could
minimize the amount of EMI. What they didn't realize is that this just ensures
that all of the interference is in phase, it doesn't eliminate it as a good
design would have.

Ray Mack
WD5IFS
mack@mails.imed.com

3475. recharge circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 16:38:49 UTC
From: n2xjk@VNET.IBM.COM
Message-ID: <19941122.150722.388@almaden.ibm.com>
Source record: 115418

I have a dead rechargeable power drill, which is a few years old. Upon opening the case, it appeared at some point an incorrect adaptor was plugged into it, causing a burnout. What was left from the burn-out got corroded too, apparently caused by a leak from one of the ni-cads, so pieces of the circuit fell out as I opened the drill casing. I recognized a diode and a resistor, but the markings on the resistor are unreadable. The rest of the interior of the drill appears undamaged.

Could someone please provide a schematic of such a recharging circuit? Thanks.

Regards, Evan Jennings, n2xjk@vnet.ibm.com

3476. Re: Finding QST int the USA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 17:25:24 UTC
From: jeffj@crl.com
Message-ID: <3at9i4$qb6@nntp.crl.com>
Source record: 115512

mack@mails.imed.COM wrote:
: Gents:

: For those of you who don't have subscriptions to QST, they have FINALLY
: started to ship it to news stands. It is a slightly different version than what
: Oddly enough I can get it at the local supermarket! You could also try
: B.Dalton or Bookstop bookstores in most malls.

As at the moment I don't belong to the ARRL I buy mine at the local
supermarket also. Really blew me away the first time I saw it there!

Jeff

--
jeffj@crl.com | When I gave food to the poor, they call me a saint.
AB6MB | When I asked why the poor had no food, they call me a
| communist. Dom Camara KPFA 94.1 Bay Area Progressive Radio!

3477. Re: Finding old magazines

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 17:45:30 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3atanq$m3m@maple.enet.net>
Source record: 115513

Several years ago I bought a product called FROM BEVERIDGE TO OSCAR, mail order out of the back of QST. It's an amazing thing: An index of virtually all electronics magazines of interest to hams for the last 50 years or so. It'll run on almost any kind of PC, doesn't require Windows, and its only defect is that you can only really search by the odd little abstracts that the author used in place of the original titles. Authors are not stated. I suspect this was done to save disk space, but it has been wonderfully effective for me and I recommend it. Look in the back of QST for the ads; I don't have one here at work to flip through or I'd look.

--73--

--Jeff Duntemann KG7JF
Scottsdale AZ

3478. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 18:34:32 UTC
From: clarke@longwood.cs.ucf.edu
Message-ID: <3atdjo$av4@longwood.cs.ucf.edu>
Source record: 115514

JWRS73A@prodigy.com (DUDLEY CHAPMAN) writes:

>>Anyone else working with Analog Devices' (or anyone else's) fast ADC's
>>and digitizing at the first IF stage, then demodulating using a DSP
>>(with all the benefits of digital filters), and finally, going through a
>>DAC to get the audio?? Do you think I could have made that sentence
>>any longer?? :-))

>ADCs that can run at IF speeds and have the dynamic range necessary for
>good rx work, require you to hock you first born child to affort them.
>Otherwise, yes, you get good digital filters out of the bargain.

Many bit A/Ds that are fast are expensive, but I just got a flyer from
MAXIM (408)737-7600 that has a single chip 6 bit Quadrature Digitizer
that works up to 60 MHz. RF-in, local oscillator in, then
you get two six bit quadrature digitized outputs. The 90 degree
phase shift is internal. Also there is divide by 16 prescaler output
derived from the local oscillator. The A/Ds follow two mixers
fed by the local oscillator.

MAXIM is good about giving out samples.

Tom Clarke

--
Tom Clarke, clarke@acme.ist.ucf.edu

He that complies against his will,
Is of his own opinion still. Samuel Butler 1612-1680.

3479. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 18:46:02 UTC
From: cmoore@sedona.intel.com
Message-ID: <3ate9a$6e8@chnews.intel.com>
Source record: 115422

In article <kevin.jessup.129.0012F85B@mail.mei.com>,
Kevin Jessup <kevin.jessup@mail.mei.com> wrote:
>
>Anyone else digitizing at the first IF stage, then demodulating using a DSP
>(with all the benefits of digital filters), and finally, going through a
>DAC to get the audio??

Hi Kevin, I have been using a Burr-Brown DEM-DSP102/202 Evaluation Fixture
with a direct conversion receiver for CW. The LO/BFO is a DDS chip so
the microcontroller/dsp can step-lock with the received signal. Receives
CW very well but not quite as good as I can. It works very well at audio
with my IC-745 with or without the CW filter.

I am presently experimenting with a 50KHz IF which existed in an old
Hallicrafters I once had and am sampling presently at 120KHz. Results
are mixed so far... too soon to tell anything.

For anyone trying to decode CW, the Goertzel algorithm works well and
can work with an average PC if the 2*cos(angle) is made equal to zero
or one. For instance, if your CW tone is 750 Hz, make the sample frequency
either 3000 or 4500 and the coefficient multiplication disappears because
750/3000 = 90 degrees and 750/4500 = 60 degrees.
--
73, Cecil, KG7BK, OOTC (All my own personal fuzzy logic, not Intel's)

3480. Re: :Schematics for an amplif

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 19:23:40 UTC
From: jms@col.hp.com
Message-ID: <3atgfs$bp@nonews.col.hp.com>
Source record: 115515

Brian Carling (brian.carling@acenet.com) wrote:
: Newsgroups: rec.radio.amateur.homebrew

: Get into amateur radio! There you can run 2000 watts
: on CB you are limited to no more than 4 watts maximum.

According to part 97, the maximum allowed power for Amateur Radio
is 1.5 KW PEP (1500 watts).

Mike, K0TER

3481. Re: Finding QST int the USA

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-22 19:31:18 UTC
From: kell@mpac.jsc.nasa.gov
Message-ID: <kell-2211941431180001@netguy.jsc.nasa.gov>
Source record: 115517

In article <3at9i4$qb6@nntp.crl.com>, jeffj@crl.com (Jeff Jones) wrote:

> mack@mails.imed.COM wrote:
> : Gents:
>
> : For those of you who don't have subscriptions to QST, they
have FINALLY
> : started to ship it to news stands. It is a slightly different version
than what
> : Oddly enough I can get it at the local supermarket! You could
also try
> : B.Dalton or Bookstop bookstores in most malls.
>
> As at the moment I don't belong to the ARRL I buy mine at the local
> supermarket also. Really blew me away the first time I saw it there!
>
> Jeff
>
> --
> jeffj@crl.com | When I gave food to the poor, they call me a saint.
> AB6MB | When I asked why the poor had no food, they call me a
> | communist. Dom Camara KPFA 94.1 Bay Area Progressive Radio!
>

How much does it cost on the newsstand vs. what it costs by "subscription"?
I haven't seen it here in Houston yet.

Ted Kell@mpac.jsc.nasa.gov
KC5CUW/AA

3482. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 00:49:14 UTC
From: patricio@eehpx4.cen.uiuc.edu
Message-ID: <3au3ia$aed@vixen.cso.uiuc.edu>
Source record: 115419

In article <1994Nov19.183138.7514@ke4zv.atl.ga.us>, you write:
|> In article <kevin.jessup.129.0012F85B@mail.mei.com> kevin.jessup@mail.mei.com (Kevin Jessup) writes:
|> >
|> >Anyone else working with Analog Devices' (or anyone else's) fast ADC's
|> >and digitizing at the first IF stage, then demodulating using a DSP
|> >(with all the benefits of digital filters), and finally, going through a
|> >DAC to get the audio?? Do you think I could have made that sentence
|> >any longer?? :-))
|>
|> See this month's QEX.
|>
|> Gary
|>
|> --
|> Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
|> Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
|> 534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
|> Lawrenceville, GA 30244 | |

What exactly is QEX? I looked for it in our Engineering Library and could only find QST. I am going to try and do a project of this type (digitizing at the IF) with the motorola 56002 and would be very interested in this and similiar articles. Also, thanks to all who responded to my newbie matching networks question.
Thanks very much, whouda thought that analog could be this cool? :)

--
Andrew Patricio "Son, you got a panty on yur head."
University of Illinois "Just drive, fast."
patricio@uiuc.edu
http://www.cen.uiuc.edu/~patricio/home.html

--
Andrew Patricio "Son, you got a panty on yur head."
University of Illinois "Just drive, fast."
patricio@uiuc.edu
http://www.cen.uiuc.edu/~patricio/home.html

3483. Re: Digitizing at the IF stage

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 01:05:52 UTC
From: patricio@eehpx4.cen.uiuc.edu
Message-ID: <3au4hg$aed@vixen.cso.uiuc.edu>
Source record: 115420

Actually, what I meant is digitizing at the second IF. We have a
Watkins-Johnson WJ-8711 FM receiver that uses the motorola DSP56001
and it can supposedly discriminate down to 1 Hz. I want to try
and build something similiar, tho probably a real bare bones kind
of a thing. Just outputs audio and not much else. Does anybody
know of any good articles on this sort of thing? Thanks.

--
Andrew Patricio "Son, you got a panty on yur head."
University of Illinois "Just drive, fast."
patricio@uiuc.edu
http://www.cen.uiuc.edu/~patricio/home.html

3484. Re: Spiral wound antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 05:13:00 UTC
From: JWRS73A@prodigy.com
Message-ID: <3auj0s$242g@usenetw1.news.prodigy.com>
Source record: 115424

Stephen,
Thats odd. I thought I responded to your message a couple of days ago. Guess we had some qrm. Anyway, the ham versions of the helical wound antennas are sold under the names of Hamstick and ProAm. Both are good mechanical designs.

Basically the design is not critical. It is a 4 foot fiberglass section topped off by a 3 ft steel whip. The glass section has a helical winding of about 1 wavelength of wire (or whatever it takes to resonate). The spacing of the wire is about 2 to 3 turns per inch until you get near the top of the glass section where you have a close wound coil. The length of the close wound coil depends on the band. A 40 meter Hamstick has about 18 inches of close wound coil. There is a space of about 3 or 4 inches between the top of the coil and the top of the glass section so as to keep the metal end of the glass section and the whip out of the field of the coil. The wire size is #14 or better and the diameter of the glass section is about 3/8 inch.

The antennas are quite efficient since the coil is kept clear of metal (unlike a Hustler), lightweight, attractive (all antennas are attractive as far as I'm concerned) and cheap. You can get a hamstick for under $20.

None of the above dimensions are critical. If you made something similar to what I described, with enough wire to resonate (with steel whip installed) you will do fine. However, for my money, I would just buy a Hamstick.
Good Luck

3485. Re: Re MCL mixer sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 05:25:09 UTC
From: JWRS73A@prodigy.com
Message-ID: <3aujnl$hig@usenetw1.news.prodigy.com>
Source record: 115425

I have purchased relatively small orders direct from MCL with my own chargecard. A few years ago they were not interested, but recently they seemed quite willing. Who Knew?

-
DUDLEY CHAPMAN JWRS73A@prodigy.com

Life is better at 60 mph and 35 wpm - WA1X/m

3486. Hello.....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 10:13:00 UTC
From: ken.snipes@woodybbs.com
Message-ID: <93.3335.7584.0NFB6465@woodybbs.com>
Source record: 115437

With this message....

The Listening Post BBS
Hampton, Va.
Becomes a new member of AR-Net

Hope to enjoy many good conversations with all of you!

Ken Snipes , KD4IEN
Sysop of The Listening Post BBS.

--- From Ken's PVT Point
* Origin: (1:271/263)

3487. Re: Looking for Mini-Circuits SBL-1H source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 14:07:29 UTC
From: c21rag@kocrsv01.delcoelect.com
Message-ID: <3avib1$f7t@kocrsv08.delcoelect.com>
Source record: 115423

In article <3alr3r$3p3@crl9.crl.com>, dmiller@crl.com (Donald J. Miller) writes:
> James D. Cronin (jdc@cci.com) wrote:
>
> : I'm looking for a couple Mini-Circuits SBL-1H's to build the
> : VHF transverters from the ARRL Handbook. There are enough
> : companies that carry the SBL-1, but not the -1H version.
>
> : Any ideas on where to find this beastie?
>
> I'm pretty sure that you can get small quantities of parts directly
> from mini-circuits. I know that their ads often list 1-9 pricing.
>
Mini-Circuits had a $50 minimum order a few years ago. They have a
number of distributors that may be more accommodating. Don't have
names/numbers but you can get that from Mini-Circuits.

Roger Grady K9OPO c21rag@kocrsv01.delcoelect.com
Delco Electronics Corp. Kokomo, IN
"All information and opinions are personal unless otherwise stated."

3488. Re: Re MCL mixer sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 15:19:10 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <Czq7vz.sn@hpqmoea.sqf.hp.com>
Source record: 115426

Mike Czuhajewski (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
: Good luck trying to go through a distributor which carries MCL. I
: don't know if this is typical, and perhaps not, but this is my
: experience--I called a local distributor a few years back which carried
: them, and when he realized I was calling to buy some things for myself,
: not for the government entity I was with at the time, his tune changed
: entirely and refused to have anything more to do with me. He referred
: me to a regional MCL-stocking distributor; I called them, and even when
: I acknowledged that I would have to go with their minimum order, they
: were very discouraging and disinterested, and essentially did
: everything in their power to make me forget about ordering from them.
: I hope your experiences in getting MCL products are better; I have
: never dealt directly with the company itself; they may be more amenable
: to smaller orders (ie, under $100) than some of the distributors. Good
: luck.

I think this is typical of distributors the world over. There are a
few honourable exceptions, but none I know of that handle mini-circuits.

I've had some success finding them at surplus dealers - I found
someone with RAY-3 very high level mixers at 6 pounds sterling each, so
I bought a bagful. MD108 and other plain vanilla varieties show up at
component stalls at rallies. Mainline Electronics in the UK seem to have
a wide range of US RF parts, but the prices are much higher than in the
US.

There is nothing magical in a high level mixer, one escape route is
to build your own. Mixer diode arrays appear in several catalogues, plus
you can match your own individual diodes easily with a DVM with a diode
test range. For HF work, very high level mixers can be made from a
couple of ferrite cores and an SD5000 quad-fet device. The plessey
SL6440 is a respectable high level mixer if you don't want to push the
state-of-the-art.

I opened one RAY-3 and found a plain old diode ring mixer, but with
3 series connected diodes in each arm of the ring. Nothing wild.

(Hi Mike, how's the Q-meter collection? I seem to be collecting
spectrum analyser bits!)

Cheers
David GM4ZNX

3489. Freq counting at 10GHz - how?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 15:50:42 UTC
From: dtiller@rmc.edu
Message-ID: <3avoci$pg9@gnd0.rmc.edu>
Source record: 115427

I've just taken the plunge into microwaves at 10GHz and need to make some test equipment. My first item is a wavemeter/freq counter...I realize that I'll now be able to find a freq counter to read 10GHz directly, so I'm thinking about the following:

```
434.7875 MHz -> 23x SRD -> filter at 10.000 GHz -> Mixer -> low pass 500MHz
^
|
waveguide coupled to
transmitter under test
thru attenator.
```

Using a DC-500MHz 'IF' will give me a direct reading of how far I am over 10.000Ghz on my freq counter (I'm not too concerned with the first few MHz - I'm using a Gunnplexer - a MHz is too close to the edge!).
By using a 10 Ghz signal to mix with the transmitter signal am I going to get nailed with nasty image problems? (Not me personally, the circuit!)
Will a signal at 9.99 Ghz appear the same as one at 10.01, or will the minus sign in the equation make it imaginary?

By using a 10GHz source I can use the same strip to mix with a 144MHz signal for a simple narrowband transmitter.

How about using a 9.000 GHz source instead with a 1.25 Ghz +- 250MHz bandpass filter? (9.000 GHz = 450 MHz * 20). That'd solve image problems, but wouldn't be useful to me as a transmitter freq source. Any advice will be greatly appreciated.

--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
Don't let your SKS get | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
"Tainted with Defilement!" | Ashland, Va 23005 | 77d 31' 32.19" W |

3490. Re: Cable TV channel 18 TVI from 2 mtrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 15:56:03 UTC
From: n921w1@pnet16.navy.mil
Message-ID: <Czq9LF.4A4@nctams1.uucp>
Source record: 115428

If all else fails give the cable co. a call and ask for a tech. that is a amateur. Last year I gave a tech (amateur type) arrived and cleaned up several bad cables, replaceing severl push on connectors with theirs and bingo the chg.18 rfi cleared up.
-Chuck AH6IN

3491. Re: Flyback Transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 19:38:29 UTC
From: bcollett@hamilton.edu
Message-ID: <bcollett-2311941438290001@150.209.16.2>
Source record: 115430

In article <3amslu$ake@ramsey.cs.laurentian.ca>,
gt@ramsey.cs.laurentian.ca (George Townsend) wrote:

> I need to find a supplier of generic flyback transformers
> for crt's. I have a computer monitor with a dead flyback
> (horizontal output) transformer, and since the manufacture
> of the monitor is out of business, the only way I'll find
> one will be from a flyback manufacture with a good
> cross-reference list. ... any ideas?
>
Try MCM Electronics. I am sorry I no longer have contact info but they
used to have a catalogue with dozens of different kinds of consumer
electronics repair parts. Look for their adds in magazines.
Hope this is some help.
Brian.
--
Brian Collett, Physics Dept. Hamilton College, Clinton, NY

3492. Pinnout on HA 1244v Hitachi IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 21:23:40 UTC
From: mgarrett@prairienet.org
Message-ID: <3b0bss$ba3@vixen.cso.uiuc.edu>
Source record: 115429

I am in need of a pinnout on a Hitachi fm If IC, HA 12442 v. Please
e-mail me. Thanks in advance
--
Mark Garrett mgarrett@firefly.prairienet.org
KA9SZX @ N9LNQ.#ECIL.IL.USA.NA

3493. Your favorite schematic capture software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 22:33:54 UTC
From: waf@sunfish.zk3.dec.com
Message-ID: <WAF.94Nov23173354@sunfish.zk3.dec.com>
Source record: 115440

Please tell me about your favorite schematic capture software.
E-mail and I'll summarize. I'm interested in stuff for *nix/X-windows,
MS-DOG, Windows, or NT. I really couldn't care less about the Mac, but
someone reading the summary may, so go ahead and tell me, similarly for
other environments.

If this is a FAQ, please flame me in public, so that others
know not to respond, but tell me where I can get the appropriate FAQ.

I'm particularly interested in whether output is offered in
portable forms, such as tiff, gif, hpcl, PostScript, etc. Whether it
offers a per-net summary of the page coordinates of pins and/or label
tags as auxiliary output. Whether the format of labels for structured
data (like IC slot names) is user programmable. Whether the placement
of body (module) labels WRT the body is programmable on an individual
basis.

73, Bill
--
Bill Freeman, waf@zk3.dec.com, KE1G, PP-SMEL-IA(ME VFR only) N4365Z
USABDA, MassABDA (novice modern), NMRA, rounds, squares, bad jokes.
Telemarketing: Do more than just say no, write saying you seek other vendors.

3494. Re: Flyback Transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-23 23:20:15 UTC
From: jkesling@shell.portal.com
Message-ID: <3b0ing$fmi@news1.shell>
Source record: 115431

George Townsend (gt@ramsey.cs.laurentian.ca) wrote:
: Of all the goups I have access to, this seemed to be the
: most appropriate one to post this too - homebrew experimenters
: are most likely to know where to get electronic parts, and I
: understand that many amateur radio operators experiment with
: broadcasting video as well as radio.

: I need to find a supplier of generic flyback transformers
: for crt's. I have a computer monitor with a dead flyback
: (horizontal output) transformer, and since the manufacture
: of the monitor is out of business, the only way I'll find
: one will be from a flyback manufacture with a good
: cross-reference list. ... any ideas?

: George Townsend
: Manager DCS
: Algoma University
: gt@thunderbird.auc.laurentian.ca
: gt@ramsey.cs.laurentian.ca
: -gt-

Try M.A.T. Electronics Inc., somehow I got on their mailing list, and they always have a large selection of flybacks in their catalog. As a matter of fact in the spring 1994 catalog they have a section titled monitor flyback replacements, with replacements listed for IBM, DEC, Epson, NEC, to name a few.

They even have a toll free number for the US and Canada, it's 800-628-1118.

I've never done business with them that I can recall but I've been receiving their catalogs for a couple of years now. Musta been one of those bingo cards......

Anyway, goodluck!
John - WA8ZGO

3495. Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 01:36:24 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <28816@uugate.wa7slg.ampr.org>
Source record: 115432

Could someone tell me about the performance of a "frequency-doubling mixer"?

These mixers are the ones consisting of back-to-back diodes, with the LO at 1/2 the desired LO frequency is applied to one end, and the RF and IF signals are extracted from the other, or something similar.

I have heard that the characteristics of this type of mixer as similar to those of a singly-balanced diode mixer (i.e. very poor intrinsic port isolation, not really great dynamic range, etc.)

The advantage of this type of mixer (obviously) is seen particularly in microwave applications where it might be awkward to come up with an LO on-frequency...

Any comments on this would be appreciated.

<Clint>

ka7oei@uugate.wa7slg.ampr.org

3496. Re: Flyback Transformers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 05:48:32 UTC
From: edw@sequent.com
Message-ID: <1994Nov24.054832.8535@sequent.com>
Source record: 115433

In article <3amslu$ake@ramsey.cs.laurentian.ca>,
George Townsend <gt@ramsey.cs.laurentian.ca> wrote:
>
>I need to find a supplier of generic flyback transformers

Arlington Electronic Wholesaler
Lee Highway
Arlington, VA

--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

3497. Re 4040 vs. Spider QRP rigs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 07:45:19 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Nov24.024519.1459@wb3ffv.wb3ffv.ampr.org>
Source record: 115439

I built a 4040 from the Nov 94 QST; I've also played briefly with a friends Spider rig. There is no comparison--the 4040 (also available for 30, 80, 160 and maybe 20) runs rings around the Spider. (For one thing, the 4040 is VFO controlled, not crystal.) Anyone contemplating purchase of one of the two rigs should study both carefully; there is a definite price differential, but also a goodly performance differential.

3498. Re: Freq counting at 10GHz - how?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 17:06:14 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Nov24.170614.1514@ke4zv.atl.ga.us>
Source record: 115435

In article <3avoci$pg9@gnd0.rmc.edu> dtiller@rmc.edu (David Tiller) writes:
>
>I've just taken the plunge into microwaves at 10GHz and need to make some
>test equipment. My first item is a wavemeter/freq counter...I realize that
>I'll now be able to find a freq counter to read 10GHz directly, so I'm
>thinking about the following:
>
>
>434.7875 MHz -> 23x SRD -> filter at 10.000 GHz -> Mixer -> low pass 500MHz
> ^
> |
> waveguide coupled to
> transmitter under test
> thru attenator.
>
>Using a DC-500MHz 'IF' will give me a direct reading of how far I am over
>10.000Ghz on my freq counter (I'm not too concerned with the first few
>MHz - I'm using a Gunnplexer - a MHz is too close to the edge!).
>By using a 10 Ghz signal to mix with the transmitter signal am I going
>to get nailed with nasty image problems? (Not me personally, the circuit!)
>Will a signal at 9.99 Ghz appear the same as one at 10.01, or will the
>minus sign in the equation make it imaginary?

It won't be imaginary, it'll be very real, and a major nuisance. There's
a simple way to determine if you are above or below the reference, however.
Just tune the unit under test up in frequency, if the count on the counter
decreases, you're measuring the image below the reference, if it increases,
then the unit under test is outputting above the reference. You can do
the same thing by tuning the reference, but the sense of the changes will
be reversed.

>By using a 10GHz source I can use the same strip to mix with a 144MHz signal
>for a simple narrowband transmitter.
>
>How about using a 9.000 GHz source instead with a 1.25 Ghz +- 250MHz bandpass
>filter? (9.000 GHz = 450 MHz * 20). That'd solve image problems, but wouldn't
>be useful to me as a transmitter freq source. Any advice will be greatly
>appreciated.

That'll work nicely, and you can use a 1.2 GHz rig as a signal source
for transmitting. And you can filter your *transmit* image too so it
won't wind up annoying someone in the 7.75 GHz band. That's the important
thing. Images are not illegal, only annoying to you, on receive, but they
can be annoying to users in other services if they occur on transmit, and
very illegal to boot.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3499. RE: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 17:38:41 UTC
From: koehler@skyfox.usask.ca
Message-ID: <24NOV94.17384174@skyfox.usask.ca>
Source record: 115434

Frequency doubling mixers are really just normal double balanced mixers with the same signal applied to the RF and LO ports. The output is the sum (i.e., 2x the frequency) and difference (zero - DC) as in normal DBM's. The ones manufactured for frequency doubler use are just ones selected to give better than normal performance. I've used normal DBM's as doublers and they work nearly as well.

Jim, VE5FP

3500. Ham Homebrew Digest - How do I subscribe?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 21:06:18 UTC
From: dean@splinter.coe.neu.edu
Message-ID: <DEAN.94Nov24160618@splinter.coe.neu.edu>
Source record: 115436

```
Hi:
How do I subscribe to HAM-HOMEBREW DIGEST?
-Dean
```

3501. MOLICEL info?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 22:38:10 UTC
From: asirene@v9001.ntu.ac.sg
Message-ID: <1994Nov25.063810.1@v9001.ntu.ac.sg>
Source record: 115448
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,sci.electronics

Hi,

I am looking for information on a type of rechargeable
cell called the MOLICEL which was produced by Moli Energy Limited,
3958 Myrtle St, Burnaby, BC V5C 4G2, Canada, tel. 604-437-6927

Can someone tell me their experiences with this type of
cell and what happened to the company. With its features, why
didn't it supercede the NiCd cells? Is the company still around
and did it fail because of some inherent flaw? Thanks.

73 de 9V1ZV Daniel

3502. 20A PSU Design. Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-24 22:43:11 UTC
From: asirene@v9001.ntu.ac.sg
Message-ID: <1994Nov25.064311.1@v9001.ntu.ac.sg>
Source record: 115447

Hi,

I need to build a 20A regulator circuit and was
wondering if the circuit for the 28V 10A supply in the
1994 ARRL Handbook can be converted for 13.8V 20A use.
Can anyone please advise?

73 de 9V1ZV Daniel

3503. Re: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 04:26:04 UTC
From: alanb@sr.hp.com
Message-ID: <3b3p0s$3ko@canyon.sr.hp.com>
Source record: 115438

koehler@skyfox.usask.ca wrote:

: Frequency doubling mixers are really just normal double balanced mixers with
: the same signal applied to the RF and LO ports. The output is the sum (i.e.,
: 2x the frequency) and difference (zero - DC) as in normal DBM's. The ones
: manufactured for frequency doubler use are just ones selected to give
: better than normal performance. I've used normal DBM's as doublers and
: they work nearly as well.

And they work even better if the RF and LO ports are fed 90 degrees out of phase. (No DC component on the output.)

AL N1AL

3504. Re: Cable TV channel 18 TVI from 2 mtrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 06:08:00 UTC
From: emd@ham.island.net
Message-ID: <112494220834Rnf0.79b4@ham.island.net>
Source record: 115442

Ken Lotts <klotts@primenet.com> writes:

>I interfere with cable ch 18 when operating 2 mtrs (Packet)..

I called the cable co. and discovered that ch 18 = the 2 mtr band..

What to do?

Ken (aa7jc)

The problem is a result of two things. One, cable systems are leaky. Cable signals not only leak out, off-air signals leak in.

Two, cable channel 18 usually has a video carrier frequence of 145.25 MHz, and operating just about anywhere in the two metre band in the near vicinity of a TV set or leaky cable system will likely cause massive interference.

By all means, complain to the cable company if you are getting into the cable system - their system is not supposed to leak out or in - but also remember that in practice it's almost impossible to prevent interference unless the cable system is well engineered, all connections are clean and tight, consumers haven't added unshielded cable extensions or left rabbit connected, and the various vcrs, tvs, and fm receivers don't have plastic covers that allow easy access to the tuner for any rf signal.

emd@ham.island.net (Robert Smits VE7EMD Ladysmith BC)

3505. Need: 75 - 100pf Variable Capacitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 08:18:10 UTC
From: wysotski@inforamp.net
Message-ID: <3b46k2$1fs@inforamp.net>
Source record: 115441

Does anyone know where I could find a 75pf-100pf variable
capacitor. I am having a great deal of trouble locating one in
this range.

If anyone knows of a source I would really appreciate your help

Thanks

3506. Re: :Schematics for an am

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 13:24:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.174.546@acenet.com>
Source record: 115455

Newsgroups: rec.radio.amateur.homebrew

MS>Brian Carling (brian.carling@acenet.com) wrote:
MS>: Newsgroups: rec.radio.amateur.homebrew

MS>: Get into amateur radio! There you can run 2000 watts
MS>: on CB you are limited to no more than 4 watts maximum.

MS>According to part 97, the maximum allowed power for Amateur Radio
MS>is 1.5 KW PEP (1500 watts).

Ooops! Thanks Mike - there I go spreading wrong information!
Thanks for the correction. I hope the CBer inquirer read your comment
here! 73 - Brian, AF4K @ W3INK

3507. schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 14:20:40 UTC
From: longi@zikzak.apana.org.au
Message-ID: <3b4rs7$a34@lazar.apana.org.au>
Source record: 115444

Does anyone know where i can ftp (or otherwise) schematics/docs/etc.. for
a simple 1200bps TNC for use on 2 Metres?

Or... Does anyone know of anyg good amateur ftp/www sites?

73... VK3XJL

--
======= LoNGi ======= Internet: longi@zikzak.apana.org.au
James P Longworth WWW page: http://zikzak.apana.org.au/~longi
==================== Packet : VK3XJL@VK3APP

3508. Re: Need: 75 - 100pf Variable Capacitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 16:53:55 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3b54r3$1a2l@info2.rus.uni-stuttgart.de>
Source record: 115461

>Does anyone know where I could find a 75pf-100pf variable
>capacitor.

May be you can increase the chance of sucess by telling us about the requiered
maximum voltage, or other ratings.

3509. Mini-Circuits demand?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 17:01:17 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3b558t$19tg@yuma.ACNS.ColoState.EDU>
Source record: 115445
Cross-posted to: rec.radio.swap,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

The recent post regarding the availability of Mini-Circuits components made me ask a local electronics shop if they'd be a stocking dealer. The manager asked me what the mail-order demand would be, so help me out and give me an idea of what you'd like to see him stock and how much you'd order. If you like other brands, list those also, he's open to suggestions!

Parts iz parts
Galen, KF0YJ

3510. "T" network design EQS.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-25 18:44:20 UTC
From: n0dh@comtch.iea.com
Message-ID: <3b5ba4$pko@krel.iea.com>
Source record: 115446

Help

I need a set of design equations for "T" networks. You know..
Given Zin and Zout at frequency F what are the values for C1,C2 and L1
(or L1, L2, and C1).

Better yet, how about an FTP site and file name/location where there is a
program to do it.

reply here or direct E-MAil
n0dh@comtch.iea.com

Dave
N0DH

"The bad news...life is hard
The good news...life is short
The Moral..Chase Dx and women, eat desert first".

3511. Re: :Schematics for an amplifier

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 00:55:26 UTC
From: pauls1234@aol.com
Message-ID: <3b611u$ee9@newsbf01.news.aol.com>
Source record: 115449

In article <cb.274.3636@nitelog.com>, dave.britt@nitelog.com (Dave Britt) writes:

Dave,

The maximum allowable power is 5 watts. Outboard amplifiers are totally illegal for such operation primarily because they will have no FCC Type Acceptance. If you are interested in operating at higher powers and other frequencies, I'd suggest looking into the various ham radio licenses available (both code and no-code).

Regards,

Paul Sexauer, W9JTO
PaulS1234 @aol.com

3512. MCL SRA-1's at hamfests

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 01:39:03 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Nov25.203903.4096@wb3ffv.wb3ffv.ampr.org>
Source record: 115453

Just a note to add to all the talk about the mixers. I'm in the Washington DC/Baltimore area, and there is a major surplus parts dealer, with Ohio license plates, who hits every significant hamfest in this area. He always sets up with a large number of tables. For the last couple years he has carried a seemingly inexhaustible supply of SRA-1 mixers, which is identical to the SBL-1 as far as most of us are concerned. They are packaged two to a piece of styrofoam, for $5 for the pair. Some are obviously unsoldered, most show no signs of solder on the pin, and of the 60+ I've bought over the years (most for friends), every last one has tested good in my jig at home. Don't know the dealers name, but one clue is that he has typewritten/printed cards in the bins with all of his parts, sometimes has that very annoying clacking relay and flashing light display, and used to have a blonde woman with glasses taking money, although I haven't seen her lately. Sometimes he has tables set up in two places at the hamfest. And if you find the bin with the mixers and there aren't as many as you'd like to buy, look around--he often has them in two different places. I've had reports of this dealer hitting quite a wide geographical area--keep an eye out for him for cheap mixers. 73 de WA8MCQ...

3513. Class AB linear amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 02:17:47 UTC
From: Rick Forbes <rlforbes@delphi.com>
Message-ID: <J2y2Ve7.rlforbes@delphi.com>
Source record: 115450

I am in the process of building a class AB linear amplifier for 160-10 meters. I've heard that you can run SSB on a class AB, but do I have to modify it in any way to be able to use SSB. I have seen many amps with a SSB switch, what is that switch for? Do I need to do something similar to that, or can I just switch my radio SSB and have it work as usual without any mods to the amp? Thanks for any help.

Rick Forbes
N9MUT

3514. Re: Class AB linear amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 04:19:05 UTC
From: JWRS73A@prodigy.com
Message-ID: <3b6cvp$eeu@usenetw1.news.prodigy.com>
Source record: 115451

>I am in the process of building a class AB linear amplifier for 160-10
meters.
>I've heard that you can run SSB on a class AB, but do I have to modify
it in any
> way to be able to use SSB. I have seen many amps with a SSB switch,
what
>is that switch for? Do I need to do something similar to that, or can I
just
>switch my radio SSB and have it work as usual without any mods to the
amp?
>Thanks for any help.
>
>Rick Forbes
>N9MUT

Rick,
You are already on the right track. A class AB amplifier is used for
SSB. You may be recalling the VHF amplifiers that have an SSB switch.
This switch is to go between class C which is efficient and is used for
FM, CW, and other digital modes, or class AB which can be also be used
for SSB, but is less efficient.
Good Luck.

-
DUDLEY CHAPMAN JWRS73A@prodigy.com

Life is better at 60 mph and 35 wpm - WA1X/m

3515. W1FB's Active CW filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 04:23:33 UTC
From: mmarmor@pluto.njcc.com
Message-ID: <3b6d85$5da@pluto.njcc.com>
Source record: 115452

Greetings,
I am building the active CW filter on page 68 of W1FB's QRP Notebook (by Doug DeMaw - 2nd edition). On page 67 Doug says "Although 747 op amps are specified....the filter noise will be substantially less if you use TLO82s for U1 and U2. They are directly interchangeable with the 747s."

After checking a few catalogs it seems that LM747CN Dual 741 Op Amp is a 14 pin device and the TLO82CP Low Noise JFET Op Amp is an 8 pin device. How can these parts be 'directly interchangeable'?

Am I making an error?

The TLO74 and TLO84 are _QUAD_ op amps in 14 pin packages, perhaps this is what I am supposed to use. I have already etched the board for the project (using the TEC-200 film -a real pain by the way, but that is another story) so I am interested in direct pin compatibility with the 747s the circuit was designed to use.

Can the 'net wisdom assist me?

PS - The filter will be used with the 80 meter Neophyte DC receiver I just finished -- this radio works GREAT -- better than I expected for such a simple design.

73
Mike, AA2UJ
mmarmor@pluto.njcc.com

3516. Re: MCL SRA-1's at hamfests

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 14:40:29 UTC
From: jimn0oct@aol.com
Message-ID: <3b7hct$mce@newsbf01.news.aol.com>
Source record: 115454

In article <1994Nov25.203903.4096@wb3ffv.wb3ffv.ampr.org>,
Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski) writes:

About SBL-1 and SRA-1 mixers. Just a note: SRA-1 mixers are the
milspec/ruugedized version of the SBL-1. Performance should be the same,
with high reliability.

Wish this guy traveled to MO!

73, Jim
N0OCT

3517. Can't find LS/HC297 Digital PLL Chip

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 16:10:02 UTC
From: robboma@aol.com
Message-ID: <3b7mkq$n6d@newsbf01.news.aol.com>
Source record: 115456

Does anyone know of other sources for the HC/LS297 digital PLL chip? TI and Signetics (now Phillips) used to make this chip, which is real handy for clock recovery circuits.

Any other IC's that may replace it?

Thanks,

Bob

3518. Re: Class AB linear amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 18:36:05 UTC
From: n921w1@pnet16.navy.mil
Message-ID: <Czw105.2v0@nctams1.uucp>
Source record: 115462

Rick Forbes <rlforbes@delphi.com> writes:
>I am in the process of building a class AB linear amplifier for 160-10 meters.
>I've heard that you can run SSB on a class AB, but do I have to modify it in any
> way to be able to use SSB. I have seen many amps with a SSB switch, what
>is that switch for? Do I need to do something similar to that, or can I just
>switch my radio SSB and have it work as usual without any mods to the amp?
>Thanks for any help.
>
>Rick Forbes
>N9MUT

Rick the reasion for the cw/ssb switch is to cut the plate voltage when
tunning your rig or modes as rtty, cw. But when in ssb incresses you plate
voltage for ssb, side band there's no carrier until you speak in to the mike.
my two cents...
AH6IN Chuck....

3519. Repairing ICOM BP84 batteries pack??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 20:20:20 UTC
From: vaillan@ireq.hydro.qc.ca
Message-ID: <Czw5tx.8Bw@ireq.hydro.qc.ca>
Source record: 115457

Did you ever succeded to open this pack to change a cell?
I would like to know your experience?
What is the best method?
Thank your for your help,
73 de Clem, VE2HQJ

Clement Vaillancourt, Institut de Recherche d'Hydro-Quebec
Analyste, Varennes, P. Quebec, Canada, J3X 1S1
Informatique scientifique Tel:+1 514 652 8238 Fax:+1 514 652 8309
Int: vaillan@ireq.hydro.qc.ca Radio-Amateur: VE2HQJ@VE2CRL.#MTL.PQ.CAN.NA

3520. Re: Wanted Heathkit SB401 manual

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 20:45:09 UTC
From: carlheintz@aol.com
Message-ID: <3b86ol$q38@newsbf01.news.aol.com>
Source record: 115458

In article <36ht0n$j7a@chopin.bcit.bc.ca>, Colin Schmutter writes:

I have one... If you want a copy of it, please write me via email and I
will calculate the cost of making a copy (taking to copy shop) + postage
and its yours!

3521. Re: Hummerland 600 receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 20:45:14 UTC
From: carlheintz@aol.com
Message-ID: <3b86oq$q3h@newsbf01.news.aol.com>
Source record: 115459

In article <37ejua$9dc@chopin.bcit.bc.ca>, Colin Schmutter writes:

OK, I'm interested. You got one for sale? If so please let me have some
info about it and what you want for it. TNKS

3522. Re: Are these messages archived?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-26 21:21:58 UTC
From: Mike@g4kfk.demon.co.uk
Message-ID: <785884918snz@g4kfk.demon.co.uk>
Source record: 115460

Hi Claude,

> At the risk of sounding abysmally stupid, I was wondering if messages
> on this newsgroup are archived. If so, is there a way to access them?
> I'm interested in trying to find out if anyone has put up plans for building
> a serial interface for the Kenwood R-5000 receiver.

> Also, how far back do the archives go? I have part of an E-Mail message
> writen back on 11/16/88 by Eric Roskos, titled "Kenwood R5000
> Modifications". It is an absolutely wonderful writeup, but unfortunately,
> my version is partially garbled due to disk problems. It would be
> fantastic to get the original version back.

The 'QRZ Ham Radio' CD Rom has a stack of old Usenet radio newsgroup
archives on it. Not sure about that particular message though, I don't
think they go that far back.

Now where's this good karma you promised me? :-)

73
Mike
G4KFK

****
* The CQ Centre BBS * 44 1753 595468 or 44 1753 593524 * Fido 2:252/320 *
* Hundreds of Megabytes of Quality Software for Radio Amateurs and SWLs *
* No access fees or subscriptions * RSGB, ARRL, AMSAT, WIA & Space News *
* Generous time & download limits * 1 MB download available on 1st call *
* Tel 44 1753 582085 * Fax 44 1753 592726 * Mail mike@g4kfk.demon.co.uk *
****

3523. Ham radio mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 13:05:00 UTC
From: karl.moser@woodybbs.com
Message-ID: <93.3392.7584.0NFB6768@woodybbs.com>
Source record: 115374

****** ALL NEW *******

Get Yours Today !!! A must for all Ham Radio Operators, SWL, or
electronic hobbiest !!

KE3NF's Radio Mod Collection. !!

Karl Has collected over 1400 files entries for the modification of
hundreds of Ham Radio's , Scanners, Short Wave Listeners, TNC'.
That is OVER 4 1/2 MEGS of Text Mods!!!! (Unzipped)

Now he is making them advailable to you!! Here's how to order:

Send 2 Formatted 1.44 3 1/2" Floppies, $10.95, And a SASE
Or
Send $14.95 and an SASE

To:
Karl Moser (KE3NF)
1015A Cayer Dr.
Glen Burnie, Md 21061

and if you act now, I will include a copy of the new collection of
Scanner and Ham Band Freqs.
So Order today, we gaurantee same day shipping!!

73's de Karl KE3NF

--- PCB15.1/2-GEcho 1.02
* Origin: BORDERTECH BBS, HAMPSTEAD,MD *USA* 410.239.4247 (1:261/1355)

3524. W5QJR Antenna products

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 18:26:19 UTC
From: jlivingston@cix.compulink.co.uk
Message-ID: <Czxv7v.30B@cix.compulink.co.uk>
Source record: 115467

I would like to get a copy of a book which (I believe) was published by
Ted Hart W5QJR -
called "Small High Efficiency Antennas - Alias the Loop". Is W5QJR on the
Net ?

John Livingston jlivingston@cix.compulink.co.uk
G4FDD G-QRP 431
+44(0)904 794305 FAX +44(0)904 657778

3525. Re: Phase Noise

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 18:35:05 UTC
From: robboma@aol.com
Message-ID: <3bajgp$bd4@newsbf01.news.aol.com>
Source record: 115463

In article <36u6rf$i6k@usenet.rpi.edu>, lascal@cii3112-19.its.rpi.edu (Lance Lascari WS2B) writes:

Can anyone out there point me to some good references on Phase Noise?

Try "Phase Noise Analysis in Radar Systems Using Personal Computers," by Stanley Goldman published by Wiley.

It had more information than I'd ever want to know but it also has lots of software.

(I must say this as I find my professors totally useless most of the time)

I agree. Sad, isn't it?

3526. Re: Ham Homebrew Digest - How do I subscribe?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 18:43:24 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3bak0c$np8@maple.enet.net>
Source record: 115464

Dean--

> How do I subscribe to HAM-HOMEBREW DIGEST?

I'm not entirely sure what you mean by that, but if by any chance at all you're talking about HAMBREW, I'll post the data here for you and everybody else.

HAMBREW is a relatively new paper journal devoted to homebrewing. It's in the "small" format (5 1/2 X 8 1/2) like ELECTRIC RADIO and ANTIQUE RADIO CLASSIFIED. It's currently a quarterly, but the editor has plans to go bimonthly (6 times a year) as soon as possible.

Each issue is about 50 pages, and so far I'm pretty happy with it. There was a neat circuit in the Spring '94 issue showing how to run 15 watts CW through an IRF 510 MOSFET. Doug DeMaw has begun writing for them, and the mag has shown steady improvement.

You can order a subscription for $20 per year (US) by calling their order line: 1-800-5-HAM-RIG.

George DeGrazio WF0K is the owner/editor.

I recommend it.

--73--

--JD--

3527. Re: Need: 75 - 100pf Variable Capacitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 18:52:36 UTC
From: Jeff Duntemann <jeffd@coriolis.com>
Message-ID: <3bakhk$nt3@maple.enet.net>
Source record: 115465

> Does anyone know where I could find a 75pf-100pf variable
> capacitor. I am having a great deal of trouble locating one in
> this range.

If you're gonna do this stuff, you should begin gathering the usual set of catalogs. First place to try is Ocean State Electronics, whose catalog is among the best. I've ordered a HUGE amount of stuff from them. Call them at 401-596-3080 and ask for a catalog. They sell the SBL-1 Mini Circuits mixer, the NE602, and lots of odd parts including variable caps of many sorts.

To avoid paying premium prices for such things, get in the habit of hitting every hamfest you can with $50 in small bills in your pocket (some quarters too!) and dig through the rusty coffee cans. I get lots of caps at every fest for 25c or 50c each unless they're big transmitting caps.

Good luck. Work at building a junkbox. Get every catalog you can.

--73--

--JD--

3528. Sci.homebrew? Know what it is?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 19:01:30 UTC
From: billb@eskimo.com
Message-ID: <Czxwup.Gov@eskimo.com>
Source record: 115466

Anyone know what sci.homebrew is? No traffic there. Is it for
beer research, or for basement physicists?

billb@eskimo.com

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.....................uuuu / oo \ uuuu........,.............................
William Beaty voice:206-781-3320 bbs:206-789-0775 cserv:71241,3623
EE/Programmer/Science exhibit designer http://www.eskimo.com/~billb/
Seattle, WA 98117 billb@eskimo.com SCIENCE HOBBYIST web page

3529. RS232 to RS422 converter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 19:18:53 UTC
From: jens4813@hgc.edu
Message-ID: <1994Nov27.191853.13108@merlin.hgc.edu>
Source record: 115368

jens4813@mstr.hgc.edu N1KCG Kevin T. Jensen

3530. Radio Direction Finder...?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-27 20:12:15 UTC
From: fqc9570@is.nyu.edu
Message-ID: <3bap6v$grl@cmcl2.NYU.EDU>
Source record: 115369

Hi! I have a question regarding to Doppler Direction Finder.
I know it uses phase-shifting by electrolically 'rotating' the
antennas.
But how to determine the phase shift angle by processing the signal?
I know there are several kinds of display to indicate the bearing of
signal, such as 16-LED or 32-LED, and 3-digit digital display.
I am specially interested in 3-digit digital display.

C�uld anyone tell me how to make that kind of circuit or any article I
can refer to??

Thanks in advance!!

please post it here or e-mail me!

Toyo
fqc9570@is.nyu.edu

3531. Re: Re MCL mixer sources

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 00:40:07 UTC
From: rick@cs.sunysb.edu
Message-ID: <3bb8t7$srj@sbrick.cs.sunysb.edu>
Source record: 115370

Mike Czuhajewski (Mike.Czuhajewski@hambbs.wb3ffv.ampr.org) wrote:
: Good luck trying to go through a distributor which carries MCL. I
: don't know if this is typical, and perhaps not, but this is my
: experience--I called a local distributor a few years back which carried

Actually, it is possible to order directly from MCL, provided
you have a tax number. I have ordered directly from them in
the past year. Rick Spanbauer, WB2CFV

3532. Single-signal DC receivers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 01:15:40 UTC
From: davek9sw@aol.com
Message-ID: <3bbavs$glq@newsbf01.news.aol.com>
Source record: 115371

Has anyone built the single-signal direct conversion receiver which uses phasing methods for sideband suppression described in the January, 1993 QST? I'm about to put it together and would like to know of anyone's experience with it.

Thanks

Dave Moorman K9SW
DaveK9SW@aol.com

3533. Overtone crystal oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 01:31:26 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <3bbbte$eqn@franklin.cc.utas.edu.au>
Source record: 115372

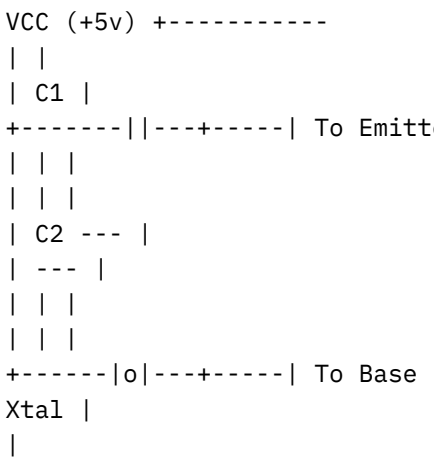
Hello,

As people probably know, I've been trying to design an amateur receiver recently. Well, my next problem involves getting a 3rd overtone crystal (48MHz) to oscillate at that frequency using an MC3362. The circuit as shown below with C1=100pf and C2=50pf gets the osc going at the fundamental, ie 16MHz.

How do I arrange things to get it to oscillate at 48MHz? Do the fundamental and 2nd overtone need to be suppressed, and if so, how?

Any info would be greatly appreciated, Thanks.

Ian.



3534. Re: Need: 75 - 100pf 1/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.209.546@acenet.com>
Source record: 115391

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

Jeff Dunteman wrote:

JD>If you're gonna do this stuff, you should begin gathering the usual
JD>set of catalogs. First place to try is Ocean State Electronics,
JD>whose catalog is among the best. I've ordered a HUGE amount of stuff
JD>from them. Call them at 401-596-3080 and ask for a catalog. They
JD>sell the SBL-1 Mini Circuits mixer, the NE602, and lots of odd parts
JD>including variable caps of many sorts.

JD>To avoid paying premium prices for such things, get in the habit of
JD>hitting every hamfest you can with $50 in small bills in your pocket
JD>(some quarters too!) and dig through the rusty coffee cans. I get
JD>lots of caps at every fest for 25c or 50c each unless they're big
JD>transmitting caps.

Hi Jeff. How about passing along a complete list of your catalogs?
Here is my list. Got any to add to it?

This list of Parts, kits and radio/electronics dealers was
prepared in October 1994 by Gene K7EEK with the help of Brian, AF4K

A & A Engineering 714-952-2114
2521 W. La Palma # K
Anaheim, CA 92801 Battery charger kits etc.

A.B.C Electronics 800-562-6503 206-364-8300
1750 15th N.E. Ham Radio New and Used
Seattle Wa 98155 Towers, Antenna's etc.

Accord Electronic Systems.800-998-2242: 305-968-1026:FAX305-968-1027
2946 N.W. 60th St. Good selection of solid-state devices, IC Sockets,
Fort Lauderdale, FL. 33309: DB Connectors, Floppy Drives and PC parts.

Active Electronics 206-881-8191: FAX 206-883-6820
13107 Northup Way 20th St. N.E. Electronic Parts.
Bellevue, Wa.98205 Good selection of Pre-Pkg. Solid-state devices.

Active Electronics National. 800-677-8899: Call for nearest Branch.
11 Cummings Park: 617-932-4616: FAX 617-933-8884: Electronic parts
Woburn, MA 01801 Good selection of Pre-Pkg. Solid-state devices.

ADI Co. 800-233-6261
180 Michael Drive Power supplies, batteries etc.
Syosset, NY 11791

Adkins:Charles P. N8QXP 313-382-0272
1821 La Blanc. Tubes
Lincoln Park,MI 48146

Advanced Computer Products Inc. 800-366-3227 FAX 714-558-8849
1310 E. Edinger 714-558-8813 Voice Sales
Santa Ana, CA 92705 Chips, semiconductors

Advanced Micro Devices, Inc. 800-292-9263: 408-732-2400:
P.O. Box 3453: 901 Thompson Place: Literature ordering. 512-462-6882
Sunnyvale California 94088-3453 For a dealer near you. 800-538-8450

Akai Electronics.Div of Mitsubishi 800-552-8324 or 800-553-7278
5757 Plaza Drive Both # will get a responce "Mitsubishi". Messages
Cypress, Ca. 90630-0007 will direct you. Parts, Lit. or Questions.

All Electronics 800-826-5432 (orders) FAX 818-781-2653
P.O. Box 567 Voice: 818-904-0524 INFO
Van Nuys, CA 91408 Misc. New and Surplus parts etc. Free Catalog

Allied Electronics: 800-433-5700 Located in 36 states, 83 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes. Min.Prepaid
order $25. Min. Credit Card order $50 as well as COD is $50. Min.

Alltech Electronics.Orders only 800-995-7773:Inquiries 619-721-7733
602 Garrison St. Fax 619-721-2823 Apple and IBM Computer support.
Oceanside, Ca. 92054 All kinds of Hardware. Call for flyer..

Alltronics: Main. 408-943-9773: FAX 408-943-9776
2300 Zanker Road Excellent Tube selection at reasonable prices
San Jose, CA 95131 Main Store. Components, grab bags etc. Min $15
24 hour BBS 408-943-0622 2400 Baud - N-8-1

Alltronics: Branch Store. 702-897-7237
6283 S. Industrial Ave. Components, grab bags etc.
Las Vegas Nv.89118

Alltronics: Branch Store. 801-485-5117
2888 S. Main St. Components, grab bags etc.
Salt Lake City, Ut. 84115

Almac Division of Arrow Electronics 800-426-1410
14360 S.E. Eastgate Way. Solid-state componets
Seattle, Wa. 98007

Amateur Electronic Supply (Main Store) 800-558-0411 or 414-358-0333
5710 W. Good Hope Rd. Fax 414-358-3337: Ham Radio New and Used.
Milwaukee, WI.53223: Excellent prices. Call for a quote.Free Catalog

Amateur Electronic Supply (Branch) 800-321-3594 or 216-585-7388
28940 Euclid Ave. Ham Radio New and Used.
Wickliffe, Ohio 44092 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-327-1917 or 407-894-3238
621 Commonwealth Ave. Ham Radio New and Used.
Orlando, Fla. 32803 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) No Toll Free # 813-461-4267
1898 Drew St. Ham Radio New and Used.
Clearwater, Fla. 34625 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-634-6227 or 702-647-3114
1072 N. Rancho Dr. Ham Radio New and Used.
Las Vegas, Nev. 89106 Excellent prices. Call for a quote.

Amateur Radio Supply 800-457-2277 or 206-767-3222
5963 Corson Ave.So.#140 24hr. Fax 206-763-8176
Seattle, Wa. 98108 Ham Radio New and Used. Good selection.

Amazing Concepts Fax 603 672 5406
P.O. Box 716
Amherst, Nh 03031

American Science and Surplus (formerly JerryCo) The Surplus Place.
P.O. Box 48838 708-475-8440: FAX 708-864-1589
Niles IL 60714-0838 Lots and lots of surplus. WWII gun cameras,
velcro, laser disk chassis, 6 volt VW wipers motors, LEDs, rubber
brains, you name it, they've had it. Catalogs are a really good.
$12.50 minimum order, (which includes the $4 shipping charge).

Amidon Associates 213-763-5770
12033 Otsego Street
North Hollywood, CA 91607 (toroid cores, ferrite beads etc.)

Antenna Bank, The. Alexandria VA. East Cust. only. 800-336-8473

Antennas West 800-926-7373: 801-373-8425
Box 50062S Wide variety of antenna kits, loops etc.
Provo, UT 84605

Antique Audio 512-467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits
>>> Continued to next message

• SLMR 2.1a • Sticker seen on the Enterprise computer: Motorola Inside

3535. Re: Need: 75 - 100pf 2/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.210.546@acenet.com>
Source record: 115392

>>> Continued from previous message
Antique Electronic Supply Co. 602-820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Appleseed Electronics Inc. 219-489-9802
P.O. Box 8228
Fort Wayne, IN 46898 Parts

ARE Communications Ltd. 44-081-997-4476
6 Royal Parade
Hanger Lane, Ealing HF kit for ICOM R-7100 to 200 kHz !
London W5A 1ET & SSB kits for Icom R-100 and R1.

ARRL: Free Getting Started in Ham Radio Info 800-326-3942
225 Main Stret: 203-666-1541: Fax 203-665-7531: QRP Books, QST Mag.
Newington, CT 06111. ARRL BBS 203-666-0578. Compuserve 70007,3373

Arrow Electronics Inc. 800-932-7769: Note, No more Catalog
1860 Smithtown Avenue Minimum $25.00 per Item Line ordered.
Ronkonkoma, NY 11779. Components distributor to the Industry.

A.R.S. 602-820-5411
Arizona Need address Tubes

Austin ARS 800-423-2604: 512-454-2994
5325 North I-35 Ham Radio New and Used
Austin, Texas. 78723 Yaesu, Alinco and Cushcraft Ant.

Azden Communications Div.:Orders only 800-643-7655: Fax516-328-7506.
147 New Hyde Park Rd. Other inquiries 516-328-7501 Parts and service.
Franklin Sq. NY.11010 New FM Tranceivers for 10-6-2-220-440 bands.

Bauman:Jeff, WB5KZW. 313-435-9922: 313-661-0202 Jeff had 1500 Tubes
6647 Stonebridge East, for sale as of December,1993
West Bloomfield, MI 48322

BCD Electro 214-343-1770
P.O. Box 830119
Richardson, TX 75083 Catalog, parts, etc.

Bigelow Electronics No number listed
P.O. Box 125
Bluffton, OH 45817 Parts, Catalog $2. Flyer 1 stamp

Brigar Electronics 607-723-3111 or FAX 607-723-5202: Free flyer with
7-9 Alice St lots of bargains with quantity pricing.$25 min.
Binghampton, NY. 13904 Electrolytics, Connectors, Solid-State. etc.
We buy excess Electronic inventory.

Cable:John, 619-258-7931
Address needed Tubes from 1941 to 1960, new.

Cable Experts (Orders only) 800-828-3340: Tech info 708-506-1886
113 McHenry Rd. FAX 708-506-1970. Coax, Connectors, Rotor Cable,
Buffalo Grove, IL. 689-1797. Ant.Wire & Baluns.SASE for literature.

C-COMM A.S: Dale Osterud 800-426-6528 206-784-7337: FAX 206-784-0541
6115 15th N.W. AEA, Alinco, Icom, Kantronics, Kenwood and Yaesu
Seattle Wa. 98107 Ham Radio New and Used Call for a quote.

CeCo Communications. 800-221-0860: 212-646-6300
2115 Avenue X Vacuum tubes
Brooklyn, NY 11235

Circuit Board Specialists June 1993 Mailed returned,
P.O. Box 969 no forwarding address
Pueblo, CO 81002 (Various kits & projects, P.C. boards)

Circuit Specialists Inc. 800-528-1417
Box 3047 Electronic components incl. RF parts
Scottsdale, AZ 85271

Circuitwerkes Co. 904-331-5999: FAX 904-331-6999
No address Circuit Boards I believe. Not aware who this is.???

C & N Electronics 800-421-9397: 612-429-9397
6104 Egg Lake Road FAX 612-429-0292
Hugo, MN 55038 Buy & sell tubes

C.O.M.B Now called Daymark, 800-328-0609
Minneapolis MN Update to follow on receipt of new Catalog.

Comm Center, The ??? Laurel MD No longer Listed

Communications Center ??? Lincoln NE No longer Listed

Communication Concepts Inc. 513-426-8600
508 Millstone Drive HF linear amp kits etc.
Xenia, OH 45385

Communications Specialist 800-584-0547:714-998-3021: FAX 714-974-3420
426 West Taft Ave. Automatic Morse Station Identifier.
Orange, CA. 926655-4296 CTCSS Tone Encoders/Decoders

Consolidated Electronics 800-543-3568 Dayton OH. DTMF decoders etc.

CQ RADIO KITS 416-775-9119
Box 1546 QRP xcvrs, rcvrs, keys etc.
Bradford, ONTARIO Canada L3Z 2B8

Crystek Crystals 800-237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

C & S Electronics 203-866-3208
P.O. Box 2142
Norwalk, CT 06852-2142 Specialty RF chips etc.

Curtis Electro Devices 415-964-3846
Box 4090
Mountain View, CA 94040 Keyer chips etc.

Cushcraft Corp. 603-627-7877: FAX 603-627-1764: Telex 4949472
P.O. Box 4680: 48 Perimeter Rd.
Manchester, Nh 03108

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

CW Electronic Sales Denver CO No longer Listed

CW Forever Key Co. Send stamp for list.
P.O. Box 659
Manchester, MO 63011 Buy & sell keys etc.

Cy-ance Kit, 501-839-8293
14786 Slate Gap Road
West Fork, AR 72774 80 different kits

Daily Electronics 800-346-6667: 206-896-8856: FAX 206-896-5476
10914 N.E. 39th Street
Vancouver, WA 98682 Tubes, all types.

Dallas Solar Power 800-345-4913
P.O. Box 611927
San Jose, CA 95161 Photovoltaics, Solar cells, chargers

Data Display Products 800-421-6815
Inglewood CA LED manufacturers, deal in volume sales to Industry.
>>> Continued to next message

3536. Re: Need: 75 - 100pf 3/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.211.546@acenet.com>
Source record: 115393

>>> Continued from previous message
Davilyn Corp. 800-235-6222 xct.CA: 818-787-3334 CA: FAX 818-787-4732
13406 Saticoy St. Electronic Tubes. Good Prices, Call for Catalog
North Hollywood, CA 91605-3475 Also Surplus Electronic Gear.

DC Electronics 800-423-0070: 602-945-7736
P.O. Box 3203 FAX 602-994-1707
Scottsdale, AZ 85271 Components. Many ICs.

Debco Electronics. Orders 800-423-4499: Info 513-531-4499: No Min.
425 Edwards Rd. FAX 513-531-4455 Millions of Chips, Transistors,
Cincinnati, OH. 45209: and Electronic Components. Excellent Prices.

Delaware Amateur Supply 800-441-7008: 302-328-7728
71 Meadow Road Ham Radio New and Used AEA,Alinco,Cushcraft,
New Castle, DE. 19720 Icom,Kenwood,Mosley,Tentec,Yaesu and more.

Derrick Electronics Broken Arrow OK No Longer Listed

DH Distributors 316-684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Ditek Industries -=[NEED ADDRESS]=- 800 762-9328

Drake, R.L. 800-543-5612 and for catalogs 800-937-2534
P.O.Box 3006 513-866-2421 Communications products
Miamisburg, OH. 45342 Call for specification sheets.

DWM Enterprises (No number listed)
1709 N. West Avenue #103
Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

Duracell Battery technical support line at 800-544-5454 ext. 3281.

EGE Inc. National 800-336-4799 orders and quotes. or nearest store.

EGE Inc. 800-572-4201: 703-643-1063: Service 703-494-8750
14803 Build America Drive. Bldg.B. Alinco, Icom, Kenwood, Ten-Tec
Woodbridge, VA. 22191. and Yaesu. Towers and Packet acc.

EGE Inc. New England area except NH. 800-237-0047

EGE Inc. 800-336-4799: Service and Info 603-898-3750
8 Stiles Rd.
Salem, NH. 03079

E.H.Yost 608-643-3194: FAX 608-643-4439
7344 Tetiva Rd. Ni Cad Batteries and Packs

Sauk City, Wi. 53583

Electrogadgets Inc. Need Phone Number.
P.O. Box 2065
Morris Township, NJ 07962 Digital voice recorder kits $20.00

Electron Tube Enterprises 802-879-0611
Box 311
Essex, VT 05451 Tubes

Electronic Bits 'N Pieces 303-361-6530
P.O. Box 31654
Aurora, CO 80041 Tubes, transistors, diodes, chips

Electronic Equipment Bank Vienna VA 800-368-3270

Electronics Exchange 314-426-3056
No address given
St. Louis, MO Electronics suurplus. Call for catalog.

Electronic Goldmine 602-451-7454 Fax 602-451-9495
P.O. Box 5408 (again the name says it all!)
Scottsdale, AZ 85261

Electronic Rainbow 800-428-3500 317-291-7262
6254 LaPas Trail
Indianapolis, IN 46268 Various kits

Elktronics Northeast Co. 603-525-4001
Rt. 1 Box 789
Hancock, NH 03449 VFO kit, RF amp, filters etc.

Emerson Radio Corp. 800-695-0095: Fax 812-386-6502
6 Engine Road National Parts Distribution.
Parsippany, NJ. 07054-0432

Erickson Communications Chicago IL 800-621-5802

Fair Radio Sales. 419-227-6573:419-223-2196: FAX 419-227-1313
1016 E. Eureka Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send S.A.S.E.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

Falkner Enterprises of America Inc.
312 River Street 319-687-2479
Sabula, IA 52070 Batteries, electronic parts, catalog

FAR Circuits (N9ATW) (No number listed)
18 N 640 Field Court
Dundee, IL 60118 (P.C. boards etc.)

Fordham Radio SUpply 800-695-4848
260 Motor Parkway
Hauppauge, NY 11788 Tools and test equipment

Fuller,R.M. Co. 800-626-6662
902 Industry Drive
Seattle, WA 98188 DTMF decoder chips & info.

Gateway Electronics 800-669-5810 Orders
8123 Page Blvd. 314-427-6116
St. Louis, MO 63130 Parts, gadgets $10 min.

G.I.S.M.O Rock Hill SC 800-845-6183

GTE Microcircuits Tempe AZ 800-828-7280

G4ZPY Paddle Keys no number listed
c/o Charles Tryor, N4LMY
7809, 10th Avenue S.
Birmingham, AL 35206 Various keys

Ham Key Co.The: Division of Ham Radio Center Inc. 800-527-0807
8342 Olive Boulevard
St. Louis, MO 63132 (Paddles, keyers, SWR meters etc.)

Ham Radio Outlet, West Coast Branches and Western Canada 800-854-6046

Ham Radio Outlet 800-854-6046 503-598-0555
11705 S.W. Pacific Hwy. New and Used Ham Supplies
Portland, Or. 97223

Ham Radio Outlet 800-854-6046 415-342-5757
999 Howard Ave. New and Used Ham Supplies
Burlingame, Ca. 94010

Ham Radio Outlet 800-854-6046 415-534-5757
2210 Livingston St. New and Used Ham Supplies
Oakland, Ca. 94606
>>> Continued to next message

3537. Re: Need: 75 - 100pf 4/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.212.546@acenet.com>
Source record: 115394

>>> Continued from previous message
Ham Radio Outlet 800-854-6046 408-736-9496
510 Lawrence Express Way #102. New and Used Ham Supplies
Sunnyvale Ca. 94086

Ham Radio Outlet 800-854-6046 714-533-7373
933 N Euclid St. New and Used Ham Supplies
Anaheim, Ca. 92801

Ham Radio Outlet 800-854-6046 818-988-2212
6265 Sepulveda Blvd. New and Used Ham Supplies
Van Nuy's, Ca. 91411

Ham Radio Outlet 800-854-6046 619-560-4900
5375 Kearmy Villa Rd. New and Used Ham Supplies
San Diego, Ca. 92123

Ham Radio Outlet, Mountain 800-444-9476

Ham Radio Outlet 800-444-9476 303-745-7373
8400 E. Llif Ave. #9. New and Used Ham Supplies
Denver,, Co. 80231

Ham Radio Outlet 800-444-9476 602-242-3515
1702 W. Camelback Rd. New and Used Ham Supplies
Phoenix, Az. 85015

Ham Radio Outlet, New England and Eastern Canada. 800-444-0047

Ham Radio Outlet 800-444-0047 603-898-3750
224 N. Broadway New and Used Ham Supplies
Salem Nh. 03079

Ham Radio Outlet, Mid Atlantic. 800-444-4799

Ham Radio Outlet 800-444-4799 703-643-1063
14803 Build America Dr. New and Used Ham Supplies
Woodbridge, Va. 22191

Ham Radio Outlet, Southeast, 800-444-7927

Ham Radio Outlet 800-444-7927 404-263-0700
6071 Bulford Hwy. New and Used Ham Supplies
Atlanta, Ga. 30340

Ham Station,The 800-729-4373: 812-422-0231: FAX 812-422-4253
P.O. Box 6522: 220 N. Fulton Ave. Service info 812-422-0252
Evansville, IN. 47719-0522 Warranty service Icom,Kenwood and Yaesu

Hamtronics, Inc. 716-392-9430: FAX 716-392-9420 Data modems
65-D Moul Road Repeater kits, Rpt-controller kits, Preamps and
Hilton, NY 14468-9535 Rcv. converter kits and Tone decoder/encoder
FM Transmitters and Receivers. Choice of a kit or factory wired unit.

Harmon Kardon Inc. 800-645-7484 516-496-3400
240 Crossways Park West Audio Equip,ent Mfg.
Woodbury, NY. 11797 National Parts Distribution.

Heathkit Educational Systems 800-253-0570: FAX 616-925-4876
P.O. Box 1288 Electronic and Computer Education
Benton Harbor MI. 49023 Kits or wired units. Free Catalog

Heathkit Of old. ;-(note the tear in the eye. 800-253-0570
Old Heathkit replacement parts until depleted plus schematics and
manual copies for some of the old Heathkits. Call with model # and or
part number. They may still have it.

Henry Radio. Orders 800-877-7979:Info 213-820-1234:FAX 310-826-7790
2050 S Bundy Dr. International & non Tch Tone 310-820-4556
Los Angelas, CA. 90025. Ham Radio New and Used. Accesories, Ant.,
Towers plus manufactures and sells Linear Amplifiers.

Hosfelt Electronics 800-524-6464: FAX 614-264-5414
2700 Sunset Blvd. No minimum, $3.75 S&H. Surplus electronics.
Steubenville OH 43952

Howes,C.M. Communications Phone: 44 327 60178
Eydon, Daventry,
Northants NN11 6PT. England
QRP, transmitters, receivers, misc. "The Heathkit of England",
though with assembly manuals not as detailed, also without the
intricate mechanicals of Heathkits. [Carried by Townsend Electronics
(at least) in the US] Townsend Electronics is listed here.

H & R Company. Herbach and Rademan. 800-848-8001: 215-788-5583
P.O.Box 122: 18 Canal Street: FAX 215-788-9577
Bristol PA 19007-0122 Tools, parts etc. Min. $25. Free catalog

HSC Electronic Supply. Halted Specialties Co. 800-442-5833 except CA.
3500 Ryder Street in CA. and outside US 408-732-1573
Santa Clara, CA 95051 Surplus (new) electronics;New & used test
equipment. Minimum order $10 ($2 handling charge under $20), plus UPS
shipping cost. Has three stores, of which 3500 Ryder Street is one.

Icom America Inc.206-454-8155:FAX 206-454-1509:Free Cat.206-450-6088
2380 116TH Ave Ne TELEX 152210 Icom Amer Bellevue
Bellevue, Wa 98004 National Parts, Service and Info.

Idiom Press (No phone given)
Box 583 Computer controlled keyer kit
Deerfield, IL 60015

International Components Corp.800-325-0101: FAX 503-336-4400
1803 NW Lincoln Way Cabinets, components & vacuum tubes

Toledo, OR 97391

International Crystal Mfg Co. 405-236-3741
10 North Lee Street Crystals!
Oklahoma City, OK 73102 Not sure which address??

ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825
P.O. Box 26330: 701 W. Sheridan
Oklahoma City OK 73126-0330

J & S Radio Sales 203-456-2667
Address Needed! G.E. & Motorola surplus radios.
Anytown, CT

Jameco Electronics 800-831-4242: 415-592-8097: FAX 800-237-6948
1355 Shoreway Road Electronic components $30 min. order
Belmont, CA 94002

JAN Crystals 800-526-9825: 813-936-2397
P.O. Box 06017: 2341 Crystal Drive: Crystals
Ft. Myers, FL 33906-6017

Javanco Orders 800-528-2626: 615-244-4444: FAX 615-244-4446
501, 12th Avenue S. BBS: 244-4445
Nashville, TN. 37203 Surplus parts etc.

J Com. Orders only 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway. QRP HT rigs for 80 - 6m, $350.00, HamBase for PC,
Victor, NY 14564 DSP Filters, Personal Autopatch & Rig/PC Interface.
Tied in with Ramsey Electronics.

JDR Micro Devices 800-538-5000: 800-538-5001
2233 Branham Lane Computers and components
San Jose, CA 95124

Johnson Shop Products 408-257-8614: FAX 408-253-6288
P.O. Box 160113 Catalog $1 or two stamps
Cupertino, CA 95016 New & some used electronic parts

Jolida Tube Factory 800-783-2555
10820 Guilford Road Vacuum tubes
Annapolis Junction, MD 20701
>>> Continued to next message

3538. Re: Need: 75 - 100pf 5/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.213.546@acenet.com>
Source record: 115395

>>> Continued from previous message
Jones & Assoc, Marlin P. 407-848-8236: FAX 407-844-8764
P.O. Box 12685 No minimum ($1 fee for under $10)
Lake Park FL 33403-0685 Surplus electronics.

JPS Communications Inc. 800-533-3819:919-790-1011: FAX 919-790-1456
P.O. Box 97757 For tech info 919-790-1048. Digital Signal Processing
Raleigh, NC. 27624 DSP Noise Reduction Products.

Jun's Electronics. 800-648-3962: 310-390-8003: FAX 310-390-4393
5563 Sepulveda Blvd. Ham Radio New and Used. Alinco,Comet,Icom,
Culver City, CA. 90230 Kenwood and Standard.

K2AW's Silicon Alley 516-334-7024
175 Friends Lane Semiconductors, in particular
Westbury, NY. 11590 Free catalog, $10 minimum order.

K3IWK (No number listed)
5120 Harmony Grove Rd. Chassis & cabinet kits. S.A.S.E. please
Dover, PA 17315

KA7QJY COMPONENTS 801-563-5173 (Danny Stevig)
Box 3893 Parts
Logan, UT 84323

K8XF Import Key Co. (No number listed)
9929 Fox Squirrel Keys, paddles etc.
Newport Richey, FL 34654

Kantronics Rf Concepts 913-842-7745
1202 E. 23 St.
Lawrence, Ks 66046

KDK Distributing Madison TN 800-251-4141

Kenwood USA Corporation 800-637-0388 This # has changed, update soon.
P.O Box 22745. 2201 E. Dominguez St. Amateur Radio Equipment
Long Beach, Ca 90801-5745 National Parts and Service

Kirby No number listed
298 W. Carmel Drive Tubes, new up to 90% off
Carmel, IN 46032

Kilo-Tec 805-646-9645
P.O. Box 10 H.V. Variable capacitors
Oakview, CA 93022

Lacomb Distributors Lacomb LA No Longer Listed

Langner:John, WB2OSZ
115 Stedman St. Slow Scan Television for IBM PC.
Chelmsford, MA 01824-1823 508-256 6907

Lake Electronics (44) 0602-382509 (Alan G4DVW)
7 Middleton Close
Nuthall QRP kits, receivers, accessories etc.
Nottingham NG16 1BX England

Lectrokit No telephone [FAST response!]
401 W. Bogart Rd.
Sandusky, OH 44870 (QRP Transceiver kits, P.C. boards etc.)

Less Buster's Electronics 702-642-0325
2039 Civic Center Dr. #176N
N. Las Vegas, NV 89030 Inverters, gadgets, parts, free catalog

Long's Electronics Birmingham AL 800-633-3410

Madison A.S Yaesu only 800-231-3057 713-729-7300 713-729-8800
12310 Zvalla Street. FAX 713-729-4766 Ham Radio New and Used Tubes,
Houston, Tx. 77085 capacitors, meters, keys and accessories.

Maplin Electronics Ltd. 011-44-702-554161 / 556001 Tech
P.O. Box 3 FAX 011-44-702-553935
Rayleigh, Essex Catalog L5.50 or L10.65 air
England SS6 8LR Hobbyist supplier

Marymac 800-231-3680: 713-392-0747
22511 Katy Freeway FAX 713-574-4567
Houston, TX 77450 (Discounts on all Radio Shack parts & products)

MCM Electronics 800-543-4330 or 800-824-TECH
650 Congress Park Drive FAX 513-434-6959 Ham Gear & Acc.
Centerville, OH 45459 Minimum $20 Parts, TV/VCR parts etc.

Memphis Amateur Electronics 800-238-6168: 901-683-9125:
1465 Wells Station Rd. FAX 901-682-7199
Memphis, TN. 38108 Ham Radio New and Used

Mendelson Industrial & Electronic Surplus 800-422-3525 (I think)
340 E. First Street 513-461-3525 (firm) : FAX 513-461-3391
Dayton, OH. 45402

Mercury Systems 609-596-3304
15 Lakeside Dr. ARRL Kits ??? Does anybody know more about this?
Marlton, NJ 08053

Merz, Don No number listed
47 Hazel Drive Used Ham Gear and Surplus
Pittsburgh, PA 15228 Send large SASE for list of tubes

MFJ Enterprises For Dealers/Orders 800-647-1800/8324 for TECH help
Box 494 601-323-5869 20M QRP transceiver,keyer, transmatch etc.
Mississippi State, MS 39762 DSP Filters, Packet/Software supplies.

Mid-Com Electronics Brentwood MO 800-325-3609

Midwest Surplus Electronics 800-523-3690: 513-879-2250:
P.O. Box 607 FAX 513-879-1755 Retail store and mail-order
501 West Main Street New and overstock electronic components
Fairborn, Ohio 45324 and test equipment. Super prices!!!
Centerville, Oh 45459-4072

Miller-Stephenson Chemical Co. 312-966-2022
6348 Oakton Street Conductive spray coatings
Morton Grove, IL 60053

Mini-Circuits New # 800-654-7949: 718-934-4500: FAX 718-332-4661
P.O. Box 350166 MAR series DC to 2000 MHz amplifiers $.99 up in
Brooklyn,NY.11235-0003. quanitys of 25. Single prices a little higher.
In Europe 44-252-835094: FAX 44-252-837010: Designers kits, Free flyer

Missouri Radio Center 800-821-7323: in MO call 816-741-8118
102 N.W. Business Park Lane. Ham Radios Sales and Service. AEA,
Kansas City, MO. 64150 Alinco,Icom,Kenwood,MFJ,Santec and Yaesu.

Mitsubishi Electric, see Akai Electronics.

Modular Systems Inc. 205-880-9998
1304 Toney Dr. Smart Keyer II
Huntsville, AL 35802

Mouser Electronics. N.CA. 800-346-6873: 408-842-5522
370 Tomkins Court FAX 408-842-7375 Call for catalog
Gilroy, CA. 95020-3631. Components. A builders paradise

Mouser Electronics. West 800-346-6873: 619-449-2222
11433 Woodside Ave. FAX 619-449-6041 Call for catalog
Santee, CA. 92071-4795. Components. A builders paradise

Mouser Electronics. Central 800-346-6873: 619-449-2222
2401 Hwy 287 N. FAX 817-483-0931 Call for catalog
Mansfield, TX 76063-4827. Components. A builders paradise

Mouser Electronics. East 800-346-6873: 619-449-2222
12 Emery Ave. FAX 201-328-7120 Call for catalog
Randolph, NJ. 07869-1362. Components. A builders paradise
>>> Continued to next message

3539. Re: Need: 75 - 100pf 6/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.214.546@acenet.com>
Source record: 115396

>>> Continued from previous message
Murdock-Mendelsohn Anyone have the address???
Dayton, OH Surplus Electronics items.

MWK Industries 1 800-356-7714
1269 Pomona Rd. Building 112 & 113
Corona,Ca. 91720

Newark Electronics 800-281-4320: 312-784-5100
4801 N. Ravenswood Avenue: Large catalog available, 94 released soon.
Chicago, IL. 60640-9944 Components, new (not geared to hobbyists)

New Sensor Corp. 800-633-5477: 212-529-0466: FAX 212-529-0486
133 Fifth Avenue. Vacuum tubes galore! Call for list.Min.Order $50.
New York, NY 10003 Std. test= $0.75/Tube. Premium Match $2/Tube

Oak Hills Research 800-842-3748: 616-796-0920: FAX 616-796-6633
20879 Madison Street (20 or 40M CW QRP transceiver)
Big Rapids, MI 49307

OCC Oklahoma Comm Center.800-765-4267:405-748-3066: FAX 405-748-3077
13424 Railway Dr. Alinco Tranceivers, Icom, Yaesu.
Oklahoma City, OK. 73114 Ham Radios New and Used

Ocean State Electronics 800-866-6626:401-596-3080: FAX 401-596-3590
P.O. Box 1458 Transmitting capacitors and rotary inductors
Westerly, RI 02891 CW keys, RF parts, power supplies etc.

Orion Business International, Inc. 209-432-4155.
360 W Bedford Ave, Suite 111,
Fresno, CA. 93711.

Palomar Engineers 619-747-3343
Box 455 Toroid cores and shielding beads.
Escondido, CA. 92033

Pan-Com International (No phone listed)
Box 130
Paradise, CA 95967 Send $1 for catalog of 350 kits etc.

Parts Express 800-338-0531
340 E. First Street Parts, tools, speakers, connectors etc.
Dayton, OH 45402

P.E.M. Tubes 916-383-9107
7392 French Road Tubes, radio, TV, transmitting, CRT
Sacramento, CA 95828

Penntek Electronics 717-248-2507
14 Peace Dr. Note: The Neophyte Receiver, QST
Lewistown, PA 17044

Periphex, Inc. 800-634-8132: 203-264-3985: FAX 203-262-6943
115-1B Hurley Road Ni-Cad Batteries and Packs
Oxford, Ct. 06478

Perfect Solutions 800-726-7086: 407-790-1070: FAX 407-790-0108
12657 Coral Breeze Drive Apple II stuff some IBM stuff.
West Palm Beach, Fl. 33414 Laser 128 Replacement parts.

Phillips EC (Partsguide) Seneca NY 800-225-8326
Polar Research Thief River Falls MN 800-328-2041
Power Communications Phoenix AZ 800-426-4267
Pro Search Electronics St. Louis MO 800-325-4016

Premium Parts + Electronis Co. 800-558-9572: FAX 414-473-4727
P.O.Box 28: Route 3, Hwy 59: VCR,Camcorder,Phono drive wheels,belts,
Whitewater, WI 53190-0028. Solid state and Misc. Free Catalog

Pride Tubes 800-638-3925: 205-650-5522: FAX 205-880-8077
8200 South Memorial Parkway 100% RF Tested Tubes
Huntsville, AL. 35802 Competitive prices.

Quality Computers 800-777-3642:810-774-7200: Fax 810-774-2698
P.O. Box 349 C-Itoh/Imagewriter replacement parts.
202000 Nine Mile Rd. Full Apple Support and IBM. Big Catalog, Free.
St. Clair Shores, Mi. 48080-0349 Educational support.

Quick Brown Fox New York NY 800-547-5995

RA Enterprises 408-986-8286 FAX 408-986-1009
2260 De La Cruz Blvd.
Santa Clara, CA 95050 Parts, mil. surplus,

R&D Electronics: Orders800-642-1123:Info 216-621-1121:FAX 216-621-8628
1224 Prospect Ave. Surplus electronics. $10 minimum.
Cleveland OH 44115 (Tues - Fri 9am-4pm Sat. 9am-3pm EST)

Radiokit 603-635-2235 FAX 603-635-2943
P.O. Box 973: 169 Jeremy Hill Road.
Pelham, NH. 03076 RF Components, Variable Caps, Coils $1 Catalog

Radio Works,The: 804-484-0140: FAX 804-483-1873
P.O. Box 6159 Baluns, Low cost Co-axial Cable,
Portsmouth, VA. 23703 RF Line Isolators.

Radio World Oriskany NY 800-448-9338

Ramsey Electronics 800-828-6286
Penfield NY Kits (Note I will verify this one for an update.)

Ramsey Electronics 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway
Victor, NY 14564 (RCVR & QRP transmitter, keyer kits etc.)

Rauchwerger, Lawrence 217-352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

RC Electronics 503-862-2641
P.O. Box 367
Murphy, OR 97533 Rare parts etc. 2 stamps for catalog

Reno Radio A.S. 800-345-5686: 702-331-7373
12 Glen Carran Circle RF Concepts, Icom, Kenwood and Yaesu.
Sparks, NV. 89431 Antennas, Ham Radio New and Used

R.F. Electronics Anaheim CA No Longer Listed

R.F Parts. To Order 800-737-2787:619-744-0700 or 0750 for Tech info
1320 Grand Avenue FAX 619-744-1943
San Marcos, CA 92069 Diamond Antennas, RF Power Transistors & Tubes.

R & R Associates 213-474-1315 (res) Richard Rathburn, KB6NQ "I mainly
3106 Glendon Ave. sell PC brds from QST, Radio Electronics, etc. and
Los Angeles, CA 90034 a few of in-house design. I also sell IC's etc.
Send a SASE every now and then for his most recent flyer
and also have boards for some Motorola Application Notes.

Ryan Communications 412-368-3859
BOX 111E Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

Sansui National Parts and Service 800-421-1500

Sharp National Parts and Service 800-526-0264

Shure Brothers 800-323-6556
Evanston, IL. Microphones and Equipment

"624 Kits" No phone listed
171 Springlake Drive (QRP kits & accessories)
Spartanburg, SC 29302
>>> Continued to next message

• SLMR 2.1a • Sticker seen on the Enterprise computer: Motorola Inside

3540. Re: Need: 75 - 100pf 7/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 02:13:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.215.546@acenet.com>
Source record: 115397

>>> Continued from previous message
Skycraft Parts and Surplus Inc. 407-628-5634 FAX 407-647-4831
P.O. Box 536186 Surplus parts etc.
Orlando, FL 32853-6186

Small Parts, Inc. 305-557-8222 Order department
13980 NW 58th Court 305-557-7955 Customer Service (ask for Mirta)
P.O. Box 4650 305-557-8004 Custom-made Parts (ask for Ziggy)
Miami Lakes, FL 33014-0650. 800-423-9009 Toll free FAX line
305-558-1255 Catalog (ask for Elizabeth)
305-557-8005 Non-standard Sizes of catalog parts (ask for Eric)
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets,
tools, wire-size drill bits (as in #61 size for PC board holes).

Smith: Dick, Electronics c/o American Electronics. 8GG9\?R-1373
P.O. Box 301: 164 Southpark Blvd.
Greenwood, IN 46142 Kits, parts. Free bulletin

Sony National Information. Call for your area dealers. 800-222-7669
Sony Parts Seattle Wa 206-763-8853
Sony National Parts 800-488-7669
Sony National Info and or problems of Warranty. 800-282-2848

Southpaw Electronics 800-851-8870: 516-352-7070: FAX 516-775-5091
P.O. Box 886 Parts, min $25. Free catalog
New Hyde Park, NY 11040-0311

S & S Engineering 301-416-0661
14102 Brown Road FAX 301-416-0963
Smithsburg, MD 21783 ($270 CW transceiver kit)

Standard Amateur Radio Products, Inc. 312-763-0081 (Voice)
P.O Box 48480 312-763-3377 (Fax)
Niles, Il 60714. Mfg of VHF-UHF Amateur Radio Equipment and acc.

Steinmetz Electronics 219-931-9316
7519 Maplewood Avenue Tubes
Hammond, IN 46324

Sun Remarketing 800-821-3221: 801-755-3360
P.O. Box 4059 AppleII series, Lisa, Macintosh service
Logan, UT 84321-4059 and related accessories plus refurbishing.

Sunset Electronics (No number listed)
12145 Alta Carmel Ct. Suite #250-139
San Diego, CA 92128 ("Build your own ham radio")

Surplus Center 800-488-3407
1015 West "O" Street (the name says it all a must have catalog!)
P.O. Box 82209 (cheapprices)
Lincoln, NE 68501-2209

Surplus Sales of Nebraska 402-346-4750 FAX 402-346-2939
1502 Jones Street
Omaha, NE 68102 $3.00 catalog (with $3 coupon)

Symphonic National Parts and Service 800-242-7158

Tannenbaum,A.G. 516-887-0057 FAX 516-599-6523
P.O. Box 110
E. Rockaway, NY 11518 Parts, High voltage capacitors, free catalog

Tejas RF Technology. 713-879-9300: FAX 713-879-9494
P.O.Box 720331 Mini Keyer, AF Filter Tejas Backpacker-II QRP kit
Houston TX 77272-0331 Many other Kits and things.

Ten-Tec 800-833-7373: 615-453-7172: FAX 428-4483: New Kit Catalog
1185 Dolly Parton Parkway. Repair Dept. 615-428-0364 ^^^ ^^^ ^^^^^^^
Sevierville, TN. 37862 Tranceivers, QRP gear and Kits. Call

Texas Tower A.S. 800-272-3467: 214-422-7306: FAX 214-881-0776
1108 Summit Ave. Suite #4 Yaesu Dealer. Ham Radio New and Used
Plano,TX. 75074 Excellent Yaesu buys. Call for a quote.

Tiare Publications 414-248-4845
P.O. Box 493W
Lake Geneva, WI 53147 (Books on QRP etc.)

Townsend Electronics Inc. 219-594-3661
Box 415 S Howes HF Kits from England
Pierceton, IN 46562 See "Howes,C.M." listing above.

Tucker Surplus Sales 800-527-4642 ext. 135: 214-340-0631
1717 Reserve St. Surplus radio & test equipment
Garland TX 75042 New Amateur Radios, Ant & Accessories

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Unity Electronics No number listed
P.O. Box 213 Vacuum tubes
Elizabeth, NJ 07206

UPI Communications Systems Saddlebrook NJ 800-526-527?

VAP Products Mentor Oh 800-321-9668

Vibroplex Co. Inc. 800-262-8387
98 Elm Street
Portland, ME 04101 (Keys, bugs etc.)

W1FB No phone #
Box 250 QRP CW transmitter kits
Luther, MI 49656

Yaesu USA 800-255-9237: 310-404-2700 Communication Products.
17210 Edwards Rd. National Parts and Service
Cerritos, Ca 90701 plus Specification Sheets.

AM International publishes a column in ELECTRIC RADIO magazine, which is probably the best source for articles on vintage amateur radio and AM. A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

The Northern California QRP Club will do another run of the
classic
NorCal-40, after the first of the year. Details will be announced in the Dec. issue of QRPp, our 72 page, 100% QRP, quarterly.
The rigs are slightly under $100.
The Sierra kits are being shipped now.
If you want information on the kits or joining our super active QRP group, send me a packet or card or telephone.
WA6GER @ KM6PX.#NOCAL.CA.USA or 3241 Eastwood Rd., Sacramento, Ca., 95821, or (916) 487-3580. Do not send any money yet! Write for info.

PLEASE SEND ADDITIONS and/or CORRECTIONS to:
Brian Carling AF4K @ W3INK or to 1:109/418

 SLMR 2.1a Sticker seen on the Enterprise computer: Motorola Inside

3541. Antique Console Rebuild Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 03:22:04 UTC
From: msr@interpath.net
Message-ID: <msr-271194222204@snoopy.interpath.net>
Source record: 115373

I am in the process of cleaning up a nice 1940's Philco console radio (with the neat pushbuttons to old 3 letter AM stations like WGN and "Police" bands). I am looking for a place to get speaker fabric as close to original as possible. Also looking for ideas/sources on how to "repaint" the dial that is fading.

I know that this is no "rare-find" radio and that I am putting more into it than it is worth. My wife and I like the way it looks in the country-style house, and there is a 1930-40ish radio station nearby that sounds _great_ through this old thing!

Thanks for any input.

msr@interpath.net
--
Michael Ramsey KD4OKR -- Network Technician -- Interpath, Inc.
Raleigh, NC

3542. Re: Single-signal DC receivers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 05:26:31 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <3bbpm7$1jn@colossus.holonet.net>
Source record: 115375

davek9sw@aol.com (DaveK9SW) writes:

>Has anyone built the single-signal direct conversion receiver which uses
>phasing methods for sideband suppression described in the January, 1993
>QST? I'm about to put it together and would like to know of anyone's
>experience with it.

>Thanks

>Dave Moorman K9SW
>DaveK9SW@aol.com

This is a fabulous concept and an excellent performer! The audio quality is incredible, and the LC filters are really quite sharp (on the lowpass side, at least).

The QRP mailing list (qrp-l@netcom.com) is trying to come up with a nice comprehensive set of modules to make a multiband SSB/CW rig with this and the phasing exciter that came in a later issue of QST.

Meanwhile, I have an R2 with various boxes to plug onto the back for various bands, and a transistorized T-368 VFO for 1.5 to 24 MHz. And a 5 watt CW transmitter which will later be a linear for the SSB exciter.

More details, ask me privately.

John K0JD

3543. Re: Class AB linear amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 07:44:14 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <3bc1of$dq3@usenet.rpi.edu>
Source record: 115376

Charles N. Burch (n921w1@pnet16.navy.mil) wrote:

Actually....
I think in many cases (vhf/uhf solid state amplifiers), the
ssb/cw switch is only to change the delay of the T/R circuitry. With
SSB you want it long. I think rebiasing (or unbiasing) an amplifier
would cause significant mismatches, so I doubt that in these solid
state designs this is done. Please correct me if I'm off base here
someone!

-L

(I know you're probably building a tube amp, but since this came up,
I'm curious about it myself)

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342

3544. Re: Overtone crystal oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 09:04:24 UTC
From: jeroen@dxcern.cern.ch
Message-ID: <1994Nov28.090424.16134@dxcern.cern.ch>
Source record: 115377

In article <3bbbte$eqn@franklin.cc.utas.edu.au>,
Ian Mitchell <ian.mitchell@research.utas.edu.au> wrote:
>Well, my next problem involves getting a 3rd overtone crystal (48MHz) to oscillate
>at that frequency using an MC3362. The circuit as shown below with C1=100pf and
>C2=50pf gets the osc going at the fundamental, ie 16MHz.
>
>How do I arrange things to get it to oscillate at 48MHz? Do the fundamental and
>2nd overtone need to be suppressed, and if so, how?
>

(Schematic diagram deleted)

Well, even overtone crystals really prefer to oscillate at their
fundamental frequency, so this is hardly surprising. There is no
fundamental difference between normal and overtone crystals. Either
can be made to oscillate at overtone frequencies. The difference is
merely a matter of specification and optimization.

The trick to get a crystal to oscillate on a given harmonic is to
make C1 and/or C2 look inductive at the lower harmonics, so that the
conditions for oscillation are not fulfilled at those frequencies.

I'd first try to put a 200nH choke, with 1nF in series to block DC
current, in parallel with C1.

You should NOT attempt to tune the resonator thus formed to 48MHz.
It is sufficient that it looks capacitive at 48MHz and inductive
at 32.

Best regards,
Jeroen Belleman
jeroen@dxcern.cern.ch

3545. Re: Ham radio mods

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 13:27:08 UTC
From: parnass@nwsf.ih.att.com
Message-ID: <CzzC18.19u@nntpa.cb.att.com>
Source record: 115378

In article <93.1325.7592.0NFB6769@woodybbs.com>,
Karl Moser <karl.moser@woodybbs.com> wrote:

>@SUBJECT:Ham Radio, Scanners, SWL Mods Disk N
> ****** ALL NEW *******
>
> Get Yours Today !!! A must for all Ham Radio Operators, SWL, or
> electronic hobbiest !!
> KE3NF's Radio Mod Collection. !!
> Karl Has collected over 1400 files entries for the modification of
> hundreds of Ham Radio's , Scanners, Short Wave Listeners, TNC'.
> That is OVER 4 1/2 MEGS of Text Mods!!!! (Unzipped)
> Now he is making them advailable to you!! Here's how to order:
> Send 2 Formatted 1.44 3 1/2" Floppies, $10.95, And a SASE
> Or
> Send $14.95 and an SASE

Karl,

I received a phone call from someone who said you had published
at least one of my articles with my name removed. He specifically
cited my review of the Radio Shack PRO-2004, which was previously
published in March 1987 Monitoring Times and The Radio Enthusiast,
February 1987.

Please contact me to discuss this matter and corrective action.

--

==========
Copyright 1994, Bob Parnass, AJ9S
AT&T Bell Laboratories - parnass@ihlpf.att.com - (708)979-5414

3546. Need PCB source for Roanoke Doppler system;rec.radio.amateur.misc;rec.radio.amateur.antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 14:11:19 UTC
From: P06288@email.mot.com
Message-ID: <1994Nov28.141119.19518@schbbs.mot.com>
Source record: 115379

I am trying to find a source for the Roanoke Doppler system described in the book "Transmitter Hunting, Radio direction finding simplified", by J Moell and T Curlee.

Also, anyone who has built this unit that has information on enhancements etc., I would appreciate your inputs.

Jim Gerwitz
N7QHk

Address: P06288@email.mot.com

3547. Need PCB source for Roanoke Doppler system

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 14:28:22 UTC
From: P06288@email.mot.com
Message-ID: <1994Nov28.142822.19858@schbbs.mot.com>
Source record: 115380

If anyone has built the Roanoke Doppler system displayed in the TAB book, "TRANSMITTER HUNTING, Radio Direction Finding Simplified", by Moell and Curlee, I am looking for two things:

1. A source for the PCB to build the electronics and the display, and;

2. any information you might share on enhancements, problems, etc.

Thanks in advance.

N7QHK
Jim Gerwitz

Internet add: P06288@email.mot.com

3548. sources for Mini-Circuits mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 15:32:56 UTC
From: wade@netcad.enet.dec.com
Message-ID: <3bct78$g5m@nntpd.lkg.dec.com>
Source record: 115387

>Subject: Re: Looking for Mini-Circuits SBL-1H source

from the number of replies expressing frustration, folks are having trouble buying from Mini-Circuits.

two suggestions:

1. if you meet the minimum order, call them - they gladly take your credit card and ship.

2. Down East Microwave (207-948-3741 FAX 948-5157) carries some of the mixers, no minimum.

paul N1BWT

3549. GE 2 chan Pheonix programing

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 15:54:53 UTC
From: kb2ear@kb2ear.overleaf.com
Message-ID: <3bcugd$620@kb2ear.overleaf.com>
Source record: 115382
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.noncomm

Is anyone out there able to program the rom in a 2 channel Pheonix
radio? If so please let me know. I have the programer for the 16
Channel version but it has no where to plug in on this one.

73,
--
Scott R. Weis KB2EAR, EMT-A
Kendall Park First Aid & Rescue Squad
Internet: kb2ear@kb2ear.overleaf.com
Snail Mail: 10 Palmer Rd., Kendall Park, NJ, 08824-1228
Phone: +1 908 297 0469

3550. Hart transmitting loop (was W5QJR Antenna products)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 16:31:31 UTC
From: alan@watsun.cc.columbia.edu
Message-ID: <3bd0l3$l0p@apakabar.cc.columbia.edu>
Source record: 115385

In article <Czxv7v.30B@cix.compulink.co.uk>,
John Livingston <jlivingston@cix.compulink.co.uk> wrote:
>I would like to get a copy of a book which (I believe) was published by
>Ted Hart W5QJR -
>called "Small High Efficiency Antennas - Alias the Loop". Is W5QJR on the
>Net ?
>
>John Livingston jlivingston@cix.compulink.co.uk
>G4FDD G-QRP 431
>+44(0)904 794305 FAX +44(0)904 657778

I'm almost finished building the Hart transmitting loop using the trombone tuning capacitor described in last month's QST rather than the capacitor described in Hart's article. This design uses a much less expensive capacitor (copper water pipe) and motor (I got mine from a mail order hobby supply, Edmund Scientific, for about $25, and suspect that I overpaid by about $20:-).

If you have access to a copy of the ARRL Antenna Book, Hart's article is in there. I believe it's a reprint of an older QST article. The Hart article includes info on a transmitting tuning capacitor that you can order from W5QJR Antenna Products (address included), or, you can build your own by digging up an air variable transmitting capacitor that can handle 40KV and a slow motor or by using the trombone design in QST with a cheaper faster motor (mine is 115 RPM). Let me know if you need more info and I'll dig it up and follow up.

73 de Alan N2YGK

3551. Drake T4XB+ HQ170AC-VHF. Keep or Dump?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 16:53:06 UTC
From: jsw@physics.att.com
Message-ID: <CzzLKJ.AsI@nntpa.cb.att.com>
Source record: 115406
Cross-posted to: rec.radio.amateur.misc,rec.radio.swap,rec.radio.amateur.equipment,rec.antiques.radio+phono,rec.radio.shortwave,rec.radio.amateur.homebrew

I am getting back on the air after many years. I have a
Drake T4XB transmitter and Hammarlund HQ170AC-VHF receiver
that I had bought in the sixties. It is clear to me that
the Hammarlund has got to go. The question is:

1. Is it worth getting a used Drake R4B receiver from somewhere
or is equipment so much better these days that it is not
worth bothering?
2. What is the going rate to buy an R4B and where would
I get one?
3. What would the going rates be to sell the T4XB or HQ170
and where would I sell them? Are they collectors' items?
4. How have xmtrs & rcvrs improved in the last 25 years?
Sensitivity, selectivity, stability, features, programmability?

Note: I started when I was 9 yrs old so I am not as old as
this msg makes me seem.

Thanks,
Joe

3552. Looking for CDROM based parts catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 17:02:21 UTC
From: efwright@cle.ab.com
Message-ID: <3bd2et$o37@news1.cle.ab.com>
Source record: 115381

I am looking for third party that is marketing a CDROM based
parts catalog for electronic components. I would also be
interested in an "on line" service. Can anyone give me
a company name or phone number?

3553. Re: MCL

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 17:06:08 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <3bd2m0$b89@bmerha64.bnr.ca>
Source record: 115383

If MCL is Mini-Circuits then there is no problem orderingly directly from them - they take Visa and American Express and are good with small quantities and personal orders. The MAR/MAV amplifiers have a minimum order of 10 each. I have often bought 4 or 6 mixers at a time. This is an excellent company and if anyone from Mini-Circuits is reading this I really appreciate the fact that they help out the small guys.

Bill Kirkland
VE3JHU

3554. Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 17:07:14 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <3bd2o2$b89@bmerha64.bnr.ca>
Source record: 115384

Anyone know anything about using overtone crystals in crystal
filters?

Bill Kirkland
VE3JHU

3555. Where to get RF parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 17:07:40 UTC
From: acooney@netcom.com
Message-ID: <acooneyCzzM8s.ICG@netcom.com>
Source record: 115399

I'm getting back into RF design after many years playing with computers, and am looking for sources of Unelco caps, Motorola MRF devices, tuneable caps, high voltage surface mount caps, and the like. The hobbyist just doesn't typically buy in the volumes local distributors need to support an order, so where do you all shop for small quantities of high quality parts?

Thanks for the help! :)

Cheers,
Alan
WD6DES
San Francisco Bay Area, California

3556. Need source for big ceramic rotary switch

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 17:27:05 UTC
From: dgf@netcom.com
Message-ID: <dgfCzzn56.HtL@netcom.com>
Source record: 115386

I'm fixing up an old BTI LK2000 amplifier. It's rotary switch is shot. The switch has the name "Johnson" on it, but no other info. It is 5 position, 4 pole (but I could use even a 2 pole switch). Can someone point me towards a source of a part I could use (even something like the original part)? I'm willing to adapt the circuit based on the part I find, but there are some mechanical constraints (mainly angle between positions due to tracking with the input filter selector).

Any advice _greatly_ appreciated!

73 Dave WB0GAZ dgf@netcom.com

3557. Re: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 18:05:16 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3bd64s$8vv@hpscit.sc.hp.com>
Source record: 115388

In article <3b3p0s$3ko@canyon.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>koehler@skyfox.usask.ca wrote:
>
>: Frequency doubling mixers are really just normal double balanced mixers with
>: the same signal applied to the RF and LO ports. The output is the sum (i.e.,
>: 2x the frequency) and difference (zero - DC) as in normal DBM's. The ones
>: manufactured for frequency doubler use are just ones selected to give
>: better than normal performance. I've used normal DBM's as doublers and
>: they work nearly as well.

Not necessarily. Some frequency doublers use a full-wave rectifier topology.
That type of topology allows unlimited (except for diode ratings) drive
power. If you use a DBM as a doubler by driving both ports, the output
power stops increasing when the total drive power is in the neighborhood
of the rated LO power for the DBM as a mixer.

>
>And they work even better if the RF and LO ports are fed 90 degrees out of
>phase. (No DC component on the output.)
>
>AL N1AL
>

Yes, this is true. The input impedance is much better behaved and you
can drive the mixer somewhat harder (maybe 6 db) before it starts to saturate.
On the other hand, it is more susceptible to AM to PM conversion.
If you instead drive the ports in phase, be sure to short out the DC output current
with an RF choke.

Rick N6RK
rkarlqu@scd.hp.com

3558. 2m transceiver schematics anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 18:41:18 UTC
From: slq6d@cc.usu.edu
Message-ID: <1994Nov28.124118.33913@cc.usu.edu>
Source record: 115389

I was wondering... has anyone out there in radioland built a working (key word) 2m tranceiver? I have been fooling aroud with the idea for a while and can't get anything to work. If anyone has, I would be interested in getting ahold of your schematics, board layouts, etc. Please send me mail, as I don't have the time to read the news very often.
Thanks.

Michael Crook
slq6d@cc.usu.edu

3559. Re: Where to get RF parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 20:09:17 UTC
From: ghiscox@netcom.com
Message-ID: <ghiscoxCzzunH.t8@netcom.com>
Source record: 115390

Alan Cooney (acooney@netcom.com) wrote:
: I'm getting back into RF design after many years playing with
: computers, and am looking for sources of Unelco caps, Motorola
: MRF devices, tuneable caps, high voltage surface mount caps, and

Try RF PARTS, San Marcos, CA. (619) 744-0900. Look for their
advertisements in QST and other hammy publications.

George

George L. Hiscox	Very funny Scotty...Now
ghiscox@netcom.com	beam down my clothes!!!
WA6RIK @ WB6YMH.#soca.ca.usa.na	^^^^^^^^^^^^^^^^^^^^^^^^

3560. Rejected by Custodian

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 20:10:44 UTC
From: NAI@quickmail.llnl.GOV
Message-ID: <n1426022161.31078@quickmail.llnl.gov>
Source record: 115320

Mail*Link(r) SMTP Ham-Homebrew Digest V94 #353

!!! Original message was too large.
!!!
!!! It is contained in the enclosure whose name
!!! is the same as the subject of this message.
!!!
!!! A preview of the message follows:

Ham-Homebrew Digest Tue, 29 Nov 94 Volume 94 : Issue 353

Today's Topics:
Frequency Doubling Mixers... evaluation...
GE 2 chan Pheonix programing
Ham-Homebrew Digest V94 #351
Hart transmitting loop (was W5QJR Antenna products)
Hummerland 600 receiver
Looking for CDROM based parts catalog
MCL
Need: 75 - 100pf 1/7
Need: 75 - 100pf 5/7
Need: 75 - 100pf 6/7
Need source for big ceramic rotary switch
Overtone Crystals for Crystal Filters?
sources for Mini-Circuits mixers
Where to get RF parts?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 28 Nov 1994 18:43:56 -0500
From: frederick.mckenzie-1@pp.ksc.nasa.gov (Fred McKenzie)
Subject: Frequency Doubling Mixers... evaluation...

In article <24NOV94.17384174@skyfox.usask.ca>, koehler@skyfox.usask.ca wrote:

> I've used normal DBM's as doublers and
> they work nearly as well.

Jim-

Do you think they would work with square wave, rather than sine wave signals? I've been looking for a simple doubler from 24 MHz square wave to 48 MHz (sine wave OK). So far, what I've tried works better for odd harmonics!

73, Fred, K4DII

Date: 28 Nov 1994 10:54:53 -0500
From: kb2ear@kb2ear.overleaf.com (Scott R. Weis KB2EAR)
Subject: GE 2 chan Pheonix programing

Is anyone out there able to program the rom in a 2 channel Pheonix radio? If so please let me know. I have the programer for the 16 Channel version but it has no where to plug in on this one.

73,
--
Scott R. Weis KB2EAR, EMT-A
Kendall Park First Aid & Rescue Squad
Internet: kb2ear@kb2ear.overleaf.com
Snail Mail: 10 Palmer Rd., Kendall Park, NJ, 08824-1228
Phone: +1 908 297 0469

Date: 29 Nov 94 03:49:31 GMT
From: bill@halcyon.COM (Bill Everett)
Subject: Ham-Homebrew Digest V94 #351

>Date: Sun, 27 Nov 1994 22:22:04 -0500
>From: msr@interpath.net (Michael Ramsey)
>Subject: Antique Console Rebuild Questions
>
>I am in the process of cleaning up a nice 1940's Philco console radio (with
>the neat pushbuttons to old 3 letter AM stations like WGN and "Police"
>bands). I am looking for a place to get speaker fabric as close to original
>as possible. Also looking for ideas/sources on how to "repaint" the dial
>that is fading.
>
>I know that this is no "rare-find" radio and that I am putting more into it
>than it is worth. My wife and I like the way it looks in the country-style
>house, and there is a 1930-40ish radio station nearby that sounds _great_
>through this old thing!
>
>Thanks for any input.
>
>msr@interpath.net
>--

Michael,

The old and reliable source for old parts is:

Antique electronic Supply
6221 S Maple Ave.
Tempe, AZ 85283

Phone: (602) 820-5411
FAX: (602) 820-4643

Good luck,

Bill K7RIE
Reply to bill@halcyon.com

Date: 28 Nov 1994 16:31:31 GMT
From: alan@watsun.cc.columbia.edu (Alan Crosswell)
Subject: Hart transmitting loop (was W5QJR Antenna products)

In article <Czxv7v.30B@cix.compulink.co.uk>,
John Livingston <jlivingston@cix.compulink.co.uk> wrote:
>I would like to get a copy of a book which (I believe) was published by
>Ted Hart W5QJR -
>called "Small High Efficiency Antennas - Alias the Loop". Is W5QJR on

<<<<<< Attached TEXT file named "Ham-Homebrew Digest V94 #353" follows >>>>>>
Received: by quickmail.llnl.gov with SMTP;29 Nov 1994 04:07:35 U
Received: by ucsd.edu; id CAA23240
sendmail 8.6.9/UCSD-2.2-sun
Tue, 29 Nov 1994 02:32:26 -0800 for ham-homebrew-list
Errors-To: ham-homebrew-relay@UCSD.EDU
Sender: ham-homebrew-relay@UCSD.EDU
Precedence: List
Received: by ucsd.edu; id CAA23223
sendmail 8.6.9/UCSD-2.2-sun
Tue, 29 Nov 1994 02:32:24 -0800 for ham-homebrew-ddist
Message-Id: <199411291032.CAA23223@ucsd.edu>
Date: Tue, 29 Nov 94 02:32:22 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@UCSD.EDU>
Errors-To: Ham-Homebrew-Errors@UCSD.EDU
Reply-To: Ham-Homebrew@UCSD.EDU
Precedence: List
Subject: Ham-Homebrew Digest V94 #353
To: Ham-Homebrew@UCSD.EDU

Ham-Homebrew Digest Tue, 29 Nov 94 Volume 94 : Issue 353

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Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

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>
>John Livingston jlivingston@cix.compulink.co.uk
>G4FDD G-QRP 431
>+44(0)904 794305 FAX +44(0)904 657778

I'm almost finished building the Hart transmitting loop using the trombone tuning capacitor described in last month's QST rather than the capacitor described in Hart's article. This design uses a much less expensive capacitor (copper water pipe) and motor (I got mine from a mail order hobby supply, Edmund Scientific, for about $25, and suspect that I overpaid by about $20:-).

If you have access to a copy of the ARRL Antenna Book, Hart's article is in there. I believe it's a reprint of an older QST article. The Hart article includes info on a transmitting tuning capacitor that you can order from W5QJR Antenna Products (address included), or, you can build your own by digging up an air variable transmitting capacitor that can handle 40KV and a slow motor or by using the trombone design in QST with a cheaper faster motor (mine is 115 RPM). Let me know if you need more info and I'll dig it up and follow up.

73 de Alan N2YGK

Date: Mon, 28 Nov 94 13:38:25 PST
From: gc@tek.com
Subject: Hummerland 600 receiver

In article <3b86oq$q3h@newsbf01.news.aol.com>, <carlheintz@aol.com> writes:

> From: carlheintz@aol.com (CarlHeintz)
> Newsgroups: rec.radio.amateur.homebrew
> Subject: Re: Hummerland 600 receiver
^^^^^^^^^^

Oh great! Now you can get a boatanchor for your Hummer.

"Bad spellars of the wurld - Untie!"

Date: 28 Nov 1994 20:15:33 -0500
From: robboma@aol.com (RobboMa)
Subject: Looking for CDROM based parts catalog

In article <3bd2et$o37@news1.cle.ab.com>, efwright@cle.ab.com (Edward F. Wright) writes:

> I am looking for third party that is marketing a CDROM based
> parts catalog for electronic components. I would also be
> interested in an "on line" service. Can anyone give me
> a company name or phone number?

Try Information Handling Services based in Colorado. I don't have their phone number but I think they have a 1-800 number you can get from information: 1-800-555-1212.

They make a few different types of CD-ROM databases. Some can be purchased on 1 or 2 CD's while others take several racks of CD's, can only be leased at several thousand $ per year but have ALL manufacuers data sheets, app notes, drawings atc.

They are now merged with a system called C.A.P.S. Computer aided products selection, which many mfg's data books had printed on the inside cover.

There are also some on-line services available but I don't have their information handy.

Rob.

Date: 28 Nov 1994 17:06:08 GMT
From: kirkland@bgtys22.bnr.ca (Bill Kirkland)
Subject: MCL

If MCL is Mini-Circuits then there is no problem orderingly directly from them - they take Visa and American Express and are good with small quantities and personal orders. The MAR/MAV amplifiers have a minimum order of 10 each. I have often bought 4 or 6 mixers at a time. This is an excellent company and if anyone from Mini-Circuits is reading this I really appreciate the fact that they help out the small guys.

Bill Kirkland
VE3JHU

Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 1/7

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

Jeff Dunteman wrote:

JD>If you're gonna do this stuff, you should begin gathering the usual
JD>set of catalogs. First place to try is Ocean State Electronics,
JD>whose catalog is among the best. I've ordered a HUGE amount of stuff
JD>from them. Call them at 401-596-3080 and ask for a catalog. They
JD>sell the SBL-1 Mini Circuits mixer, the NE602, and lots of odd parts
JD>including variable caps of many sorts.

JD>To avoid paying premium prices for such things, get in the habit of
JD>hitting every hamfest you can with $50 in small bills in your pocket
JD>(some quarters too!) and dig through the rusty coffee cans. I get
JD>lots of caps at every fest for 25c or 50c each unless they're big
JD>transmitting caps.

Hi Jeff. How about passing along a complete list of your catalogs?
Here is my list. Got any to add to it?

This list of Parts, kits and radio/electronics dealers was
prepared in October 1994 by Gene K7EEK with the help of Brian, AF4K

A & A Engineering 714-952-2114
2521 W. La Palma # K
Anaheim, CA 92801 Battery charger kits etc.

A.B.C Electronics 800-562-6503 206-364-8300
1750 15th N.E. Ham Radio New and Used
Seattle Wa 98155 Towers, Antenna's etc.

Accord Electronic Systems.800-998-2242: 305-968-1026:FAX305-968-1027
2946 N.W. 60th St. Good selection of solid-state devices, IC Sockets,
Fort Lauderdale, FL. 33309: DB Connectors, Floppy Drives and PC parts.

Active Electronics 206-881-8191: FAX 206-883-6820
13107 Northup Way 20th St. N.E. Electronic Parts.
Bellevue, Wa.98205 Good selection of Pre-Pkg. Solid-state devices.

Active Electronics National. 800-677-8899: Call for nearest Branch.
11 Cummings Park: 617-932-4616: FAX 617-933-8884: Electronic parts
Woburn, MA 01801 Good selection of Pre-Pkg. Solid-state devices.

ADI Co. 800-233-6261
180 Michael Drive Power supplies, batteries etc.
Syosset, NY 11791

Adkins:Charles P. N8QXP 313-382-0272
1821 La Blanc. Tubes
Lincoln Park,MI 48146

Advanced Computer Products Inc. 800-366-3227 FAX 714-558-8849
1310 E. Edinger 714-558-8813 Voice Sales
Santa Ana, CA 92705 Chips, semiconductors

Advanced Micro Devices, Inc. 800-292-9263: 408-732-2400:
P.O. Box 3453: 901 Thompson Place: Literature ordering. 512-462-6882
Sunnyvale California 94088-3453 For a dealer near you. 800-538-8450

Akai Electronics.Div of Mitsubishi 800-552-8324 or 800-553-7278
5757 Plaza Drive Both # will get a responce "Mitsubishi". Messages
Cypress, Ca. 90630-0007 will direct you. Parts, Lit. or Questions.

All Electronics 800-826-5432 (orders) FAX 818-781-2653
P.O. Box 567 Voice: 818-904-0524 INFO
Van Nuys, CA 91408 Misc. New and Surplus parts etc. Free Catalog

Allied Electronics: 800-433-5700 Located in 36 states, 83 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes. Min.Prepaid
order $25. Min. Credit Card order $50 as well as COD is $50. Min.

Alltech Electronics.Orders only 800-995-7773:Inquiries 619-721-7733
602 Garrison St. Fax 619-721-2823 Apple and IBM Computer support.
Oceanside, Ca. 92054 All kinds of Hardware. Call for flyer..

Alltronics: Main. 408-943-9773: FAX 408-943-9776
2300 Zanker Road Excellent Tube selection at reasonable prices
San Jose, CA 95131 Main Store. Components, grab bags etc. Min $15
24 hour BBS 408-943-0622 2400 Baud - N-8-1

Alltronics: Branch Store. 702-897-7237
6283 S. Industrial Ave. Components, grab bags etc.
Las Vegas Nv.89118

Alltronics: Branch Store. 801-485-5117
2888 S. Main St. Components, grab bags etc.
Salt Lake City, Ut. 84115

Almac Division of Arrow Electronics 800-426-1410
14360 S.E. Eastgate Way. Solid-state componets
Seattle, Wa. 98007

Amateur Electronic Supply (Main Store) 800-558-0411 or 414-358-0333
5710 W. Good Hope Rd. Fax 414-358-3337: Ham Radio New and Used.
Milwaukee, WI.53223: Excellent prices. Call for a quote.Free Catalog

Amateur Electronic Supply (Branch) 800-321-3594 or 216-585-7388
28940 Euclid Ave. Ham Radio New and Used.
Wickliffe, Ohio 44092 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-327-1917 or 407-894-3238
621 Commonwealth Ave. Ham Radio New and Used.
Orlando, Fla. 32803 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) No Toll Free # 813-461-4267
1898 Drew St. Ham Radio New and Used.
Clearwater, Fla. 34625 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-634-6227 or 702-647-3114
1072 N. Rancho Dr. Ham Radio New and Used.
Las Vegas, Nev. 89106 Excellent prices. Call for a quote.

Amateur Radio Supply 800-457-2277 or 206-767-3222
5963 Corson Ave.So.#140 24hr. Fax 206-763-8176
Seattle, Wa. 98108 Ham Radio New and Used. Good selection.

Amazing Concepts Fax 603 672 5406
P.O. Box 716
Amherst, Nh 03031

American Science and Surplus (formerly JerryCo) The Surplus Place.
P.O. Box 48838 708-475-8440: FAX 708-864-1589
Niles IL 60714-0838 Lots and lots of surplus. WWII gun cameras,
velcro, laser disk chassis, 6 volt VW wipers motors, LEDs, rubber
brains, you name it, they've had it. Catalogs are a really good.
$12.50 minimum order, (which includes the $4 shipping charge).

Amidon Associates 213-763-5770
12033 Otsego Street
North Hollywood, CA 91607 (toroid cores, ferrite beads etc.)

Antenna Bank, The. Alexandria VA. East Cust. only. 800-336-8473

Antennas West 800-926-7373: 801-373-8425
Box 50062S Wide variety of antenna kits, loops etc.
Provo, UT 84605

Antique Audio 512-467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 5/7

>>> Continued from previous message
Jones & Assoc, Marlin P. 407-848-8236: FAX 407-844-8764
P.O. Box 12685 No minimum ($1 fee for under $10)
Lake Park FL 33403-0685 Surplus electronics.

JPS Communications Inc. 800-533-3819:919-790-1011: FAX 919-790-1456
P.O. Box 97757 For tech info 919-790-1048. Digital Signal Processing
Raleigh, NC. 27624 DSP Noise Reduction Products.

Jun's Electronics. 800-648-3962: 310-390-8003: FAX 310-390-4393
5563 Sepulveda Blvd. Ham Radio New and Used. Alinco,Comet,Icom,
Culver City, CA. 90230 Kenwood and Standard.

K2AW's Silicon Alley 516-334-7024
175 Friends Lane Semiconductors, in particular
Westbury, NY. 11590 Free catalog, $10 minimum order.

K3IWK (No number listed)
5120 Harmony Grove Rd. Chassis & cabinet kits. S.A.S.E. please
Dover, PA 17315

KA7QJY COMPONENTS 801-563-5173 (Danny Stevig)
Box 3893 Parts
Logan, UT 84323

K8XF Import Key Co. (No number listed)
9929 Fox Squirrel Keys, paddles etc.
Newport Richey, FL 34654

Kantronics Rf Concepts 913-842-7745
1202 E. 23 St.
Lawrence, Ks 66046

KDK Distributing Madison TN 800-251-4141

Kenwood USA Corporation 800-637-0388 This # has changed, update soon.
P.O Box 22745. 2201 E. Dominguez St. Amateur Radio Equipment
Long Beach, Ca 90801-5745 National Parts and Service

Kirby No number listed
298 W. Carmel Drive Tubes, new up to 90% off
Carmel, IN 46032

Kilo-Tec 805-646-9645
P.O. Box 10 H.V. Variable capacitors
Oakview, CA 93022

Lacomb Distributors Lacomb LA No Longer Listed

Langner:John, WB2OSZ
115 Stedman St. Slow Scan Television for IBM PC.
Chelmsford, MA 01824-1823 508-256 6907

Lake Electronics (44) 0602-382509 (Alan G4DVW)
7 Middleton Close
Nuthall QRP kits, receivers, accessories etc.
Nottingham NG16 1BX England

Lectrokit No telephone [FAST response!]
401 W. Bogart Rd.
Sandusky, OH 44870 (QRP Transceiver kits, P.C. boards etc.)

Less Buster's Electronics 702-642-0325
2039 Civic Center Dr. #176N
N. Las Vegas, NV 89030 Inverters, gadgets, parts, free catalog

Long's Electronics Birmingham AL 800-633-3410

Madison A.S Yaesu only 800-231-3057 713-729-7300 713-729-8800
12310 Zvalla Street. FAX 713-729-4766 Ham Radio New and Used Tubes,
Houston, Tx. 77085 capacitors, meters, keys and accessories.

Maplin Electronics Ltd. 011-44-702-554161 / 556001 Tech
P.O. Box 3 FAX 011-44-702-553935
Rayleigh, Essex Catalog L5.50 or L10.65 air
England SS6 8LR Hobbyist supplier

Marymac 800-231-3680: 713-392-0747
22511 Katy Freeway FAX 713-574-4567
Houston, TX 77450 (Discounts on all Radio Shack parts & products)

MCM Electronics 800-543-4330 or 800-824-TECH
650 Congress Park Drive FAX 513-434-6959 Ham Gear & Acc.
Centerville, OH 45459 Minimum $20 Parts, TV/VCR parts etc.

Memphis Amateur Electronics 800-238-6168: 901-683-9125:
1465 Wells Station Rd. FAX 901-682-7199
Memphis, TN. 38108 Ham Radio New and Used

Mendelson Industrial & Electronic Surplus 800-422-3525 (I think)
340 E. First Street 513-461-3525 (firm) : FAX 513-461-3391
Dayton, OH. 45402

Mercury Systems 609-596-3304
15 Lakeside Dr. ARRL Kits ??? Does anybody know more about this?
Marlton, NJ 08053

Merz, Don No number listed
47 Hazel Drive Used Ham Gear and Surplus
Pittsburgh, PA 15228 Send large SASE for list of tubes

MFJ Enterprises For Dealers/Orders 800-647-1800/8324 for TECH help
Box 494 601-323-5869 20M QRP transceiver,keyer, transmatch etc.
Mississippi State, MS 39762 DSP Filters, Packet/Software supplies.

Mid-Com Electronics Brentwood MO 800-325-3609

Midwest Surplus Electronics 800-523-3690: 513-879-2250:
P.O. Box 607 FAX 513-879-1755 Retail store and mail-order
501 West Main Street New and overstock electronic components
Fairborn, Ohio 45324 and test equipment. Super prices!!!
Centerville, Oh 45459-4072

Miller-Stephenson Chemical Co. 312-966-2022
6348 Oakton Street Conductive spray coatings
Morton Grove, IL 60053

Mini-Circuits New # 800-654-7949: 718-934-4500: FAX 718-332-4661
P.O. Box 350166 MAR series DC to 2000 MHz amplifiers $.99 up in
Brooklyn,NY.11235-0003. quanitys of 25. Single prices a little higher.
In Europe 44-252-835094: FAX 44-252-837010: Designers kits, Free flyer

Missouri Radio Center 800-821-7323: in MO call 816-741-8118
102 N.W. Business Park Lane. Ham Radios Sales and Service. AEA,
Kansas City, MO. 64150 Alinco,Icom,Kenwood,MFJ,Santec and Yaesu.

Mitsubishi Electric, see Akai Electronics.

Modular Systems Inc. 205-880-9998
1304 Toney Dr. Smart Keyer II
Huntsville, AL 35802

Mouser Electronics. N.CA. 800-346-6873: 408-842-5522
370 Tomkins Court FAX 408-842-7375 Call for catalog
Gilroy, CA. 95020-3631. Components. A builders paradise

Mouser Electronics. West 800-346-6873: 619-449-2222
11433 Woodside Ave. FAX 619-449-6041 Call for catalog
Santee, CA. 92071-4795. Components. A builders paradise

Mouser Electronics. Central 800-346-6873: 619-449-2222
2401 Hwy 287 N. FAX 817-483-0931 Call for catalog
Mansfield, TX 76063-4827. Components. A builders paradise

Mouser Electronics. East 800-346-6873: 619-449-2222
12 Emery Ave. FAX 201-328-7120 Call for catalog
Randolph, NJ. 07869-1362. Components. A builders paradise
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 6/7

>>> Continued from previous message
Murdock-Mendelsohn Anyone have the address???
Dayton, OH Surplus Electronics items.

MWK Industries 1 800-356-7714
1269 Pomona Rd. Building 112 & 113
Corona,Ca. 91720

Newark Electronics 800-281-4320: 312-784-5100
4801 N. Ravenswood Avenue: Large catalog available, 94 released soon.
Chicago, IL. 60640-9944 Components, new (not geared to hobbyists)

New Sensor Corp. 800-633-5477: 212-529-0466: FAX 212-529-0486
133 Fifth Avenue. Vacuum tubes galore! Call for list.Min.Order $50.
New York, NY 10003 Std. test= $0.75/Tube. Premium Match $2/Tube

Oak Hills Research 800-842-3748: 616-796-0920: FAX 616-796-6633
20879 Madison Street (20 or 40M CW QRP transceiver)
Big Rapids, MI 49307

OCC Oklahoma Comm Center.800-765-4267:405-748-3066: FAX 405-748-3077
13424 Railway Dr. Alinco Tranceivers, Icom, Yaesu.
Oklahoma City, OK. 73114 Ham Radios New and Used

Ocean State Electronics 800-866-6626:401-596-3080: FAX 401-596-3590
P.O. Box 1458 Transmitting capacitors and rotary inductors
Westerly, RI 02891 CW keys, RF parts, power supplies etc.

Orion Business International, Inc. 209-432-4155.
360 W Bedford Ave, Suite 111,
Fresno, CA. 93711.

Palomar Engineers 619-747-3343
Box 455 Toroid cores and shielding beads.

Escondido, CA. 92033

Pan-Com International (No phone listed)
Box 130
Paradise, CA 95967 Send $1 for catalog of 350 kits etc.

Parts Express 800-338-0531
340 E. First Street Parts, tools, speakers, connectors etc.
Dayton, OH 45402

P.E.M. Tubes 916-383-9107
7392 French Road Tubes, radio, TV, transmitting, CRT
Sacramento, CA 95828

Penntek Electronics 717-248-2507
14 Peace Dr. Note: The Neophyte Receiver, QST
Lewistown, PA 17044

Periphex, Inc. 800-634-8132: 203-264-3985: FAX 203-262-6943
115-1B Hurley Road Ni-Cad Batteries and Packs
Oxford, Ct. 06478

Perfect Solutions 800-726-7086: 407-790-1070: FAX 407-790-0108
12657 Coral Breeze Drive Apple II stuff some IBM stuff.
West Palm Beach, Fl. 33414 Laser 128 Replacement parts.

Phillips EC (Partsguide) Seneca NY 800-225-8326
Polar Research Thief River Falls MN 800-328-2041
Power Communications Phoenix AZ 800-426-4267
Pro Search Electronics St. Louis MO 800-325-4016

Premium Parts + Electronis Co. 800-558-9572: FAX 414-473-4727
P.O.Box 28: Route 3, Hwy 59: VCR,Camcorder,Phono drive wheels,belts,
Whitewater, WI 53190-0028. Solid state and Misc. Free Catalog

Pride Tubes 800-638-3925: 205-650-5522: FAX 205-880-8077
8200 South Memorial Parkway 100% RF Tested Tubes
Huntsville, AL. 35802 Competitive prices.

Quality Computers 800-777-3642:810-774-7200: Fax 810-774-2698
P.O. Box 349 C-Itoh/Imagewriter replacement parts.
202000 Nine Mile Rd. Full Apple Support and IBM. Big Catalog, Free.
St. Clair Shores, Mi. 48080-0349 Educational support.

Quick Brown Fox New York NY 800-547-5995

RA Enterprises 408-986-8286 FAX 408-986-1009
2260 De La Cruz Blvd.
Santa Clara, CA 95050 Parts, mil. surplus,

R&D Electronics: Orders800-642-1123:Info 216-621-1121:FAX 216-621-8628
1224 Prospect Ave. Surplus electronics. $10 minimum.
Cleveland OH 44115 (Tues - Fri 9am-4pm Sat. 9am-3pm EST)

Radiokit 603-635-2235 FAX 603-635-2943
P.O. Box 973: 169 Jeremy Hill Road.
Pelham, NH. 03076 RF Components, Variable Caps, Coils $1 Catalog

Radio Works,The: 804-484-0140: FAX 804-483-1873
P.O. Box 6159 Baluns, Low cost Co-axial Cable,
Portsmouth, VA. 23703 RF Line Isolators.

Radio World Oriskany NY 800-448-9338

Ramsey Electronics 800-828-6286
Penfield NY Kits (Note I will verify this one for an update.)

Ramsey Electronics 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway
Victor, NY 14564 (RCVR & QRP transmitter, keyer kits etc.)

Rauchwerger, Lawrence 217-352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

RC Electronics 503-862-2641
P.O. Box 367
Murphy, OR 97533 Rare parts etc. 2 stamps for catalog

Reno Radio A.S. 800-345-5686: 702-331-7373
12 Glen Carran Circle RF Concepts, Icom, Kenwood and Yaesu.
Sparks, NV. 89431 Antennas, Ham Radio New and Used

R.F. Electronics Anaheim CA No Longer Listed

R.F Parts. To Order 800-737-2787:619-744-0700 or 0750 for Tech info
1320 Grand Avenue FAX 619-744-1943
San Marcos, CA 92069 Diamond Antennas, RF Power Transistors & Tubes.

R & R Associates 213-474-1315 (res) Richard Rathburn, KB6NQ "I mainly
3106 Glendon Ave. sell PC brds from QST, Radio Electronics, etc. and
Los Angeles, CA 90034 a few of in-house design. I also sell IC's etc.
Send a SASE every now and then for his most recent flyer
and also have boards for some Motorola Application Notes.

Ryan Communications 412-368-3859
BOX 111E Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

Sansui National Parts and Service 800-421-1500

Sharp National Parts and Service 800-526-0264

Shure Brothers 800-323-6556
Evanston, IL. Microphones and Equipment

"624 Kits" No phone listed
171 Springlake Drive (QRP kits & accessories)
Spartanburg, SC 29302
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

----

Date: Mon, 28 Nov 1994 17:27:05 GMT
From: dgf@netcom.com (David Feldman)
Subject: Need source for big ceramic rotary switch

I'm fixing up an old BTI LK2000 amplifier. It's rotary switch is shot.
The switch has the name "Johnson" on it, but no other info. It is 5
position, 4 pole (but I could use even a 2 pole switch). Can someone
point me towards a source of a part I could use (even something like
the original part)? I'm willing to adapt the circuit based on the part
I find, but there are some mechanical constraints (mainly angle between
positions due to tracking with the input filter selector).

Any advice _greatly_ appreciated!

73 Dave WB0GAZ dgf@netcom.com

Date: 28 Nov 1994 17:07:14 GMT
From: kirkland@bgtys22.bnr.ca (Bill Kirkland)
Subject: Overtone Crystals for Crystal Filters?

Anyone know anything about using overtone crystals in crystal
filters?

Bill Kirkland
VE3JHU

Date: 28 Nov 1994 15:32:56 GMT
From: wade@netcad.enet.dec.com (Paul Wade)
Subject: sources for Mini-Circuits mixers

>Subject: Re: Looking for Mini-Circuits SBL-1H source

from the number of replies expressing frustration, folks are having
trouble buying from Mini-Circuits.

two suggestions:

1. if you meet the minimum order, call them - they gladly take your
credit card and ship.

2. Down East Microwave (207-948-3741 FAX 948-5157) carries some of
the mixers, no minimum.

paul N1BWT

Date: Mon, 28 Nov 1994 17:07:40 GMT
From: acooney@netcom.com (Alan Cooney)
Subject: Where to get RF parts?

I'm getting back into RF design after many years playing with computers, and am looking for sources of Unelco caps, Motorola MRF devices, tuneable caps, high voltage surface mount caps, and the like. The hobbyist just doesn't typically buy in the volumes local distributors need to support an order, so where do you all shop for small quantities of high quality parts?

Thanks for the help! :)

Cheers,
Alan
WD6DES
San Francisco Bay Area, California

End of Ham-Homebrew Digest V94 #353
****

3561. Re: Hummerland 600 receiver

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 21:38:25 UTC
From: gc@tek.com
Message-ID: <3bdj0k$er8@gv-gate.gvg.tek.com>
Source record: 115398

In article <3b86oq$q3h@newsbf01.news.aol.com>, <carlheintz@aol.com> writes:

> From: carlheintz@aol.com (CarlHeintz)
> Newsgroups: rec.radio.amateur.homebrew
> Subject: Re: Hummerland 600 receiver
^^^^^^^^^^

Oh great! Now you can get a boatanchor for your Hummer.

"Bad spellars of the wurld - Untie!"

3562. NEED EPW.EXE (EPROM Writer) for 27256

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 22:33:56 UTC
From: rongross@netcom.com
Message-ID: <rongrossD001CK.3Ju@netcom.com>
Source record: 115409

[Article crossposted from comp.sys.ibm.pc.hardware.misc]
[Author was Ron Gross]
[Posted on Sun, 20 Nov 1994 18:36:12 GMT]

I need an upgraded version of EPW, the EPROM Writer program that came with my EPROM programmer. It is the type with adapter card and outboard ZIF with dip selection of EPROM type, up to 27256. The problem is that the program, version 1.0, doesn't support the 27256, only up to 27128. Is there a version of this that might work with this *generic* imported type of EPROM programmer (its pretty old by present standards, is 8 bit, and only likes to work in my antique XT clone, but nevertheless it WORKS!). Thanks to anyone who may be able to help...

--
rongross@netcom.com
--
rongross@netcom.com

3563. Re: Looking for CDROM based parts catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 23:35:45 UTC
From: frederick.mckenzie-1@kmail.ksc.nasa.gov
Message-ID: <frederick.mckenzie-1-2811941835450001@k4dii.ksc.nasa.gov>
Source record: 115400

In article <3bd2et$o37@news1.cle.ab.com>, efwright@cle.ab.com (Edward F. Wright) wrote:
> I am looking for third party that is marketing a CDROM based
> parts catalog for electronic components.

Edward-

This may not be what you want, but Allied Electronics has a CD version of their "940 Engineering Manual & Purchasing Guide". They have a phone number listed on the disk, but it may only be good for component ordering. It is (800)433-5700.

73, Fred, K4DII

3564. Re: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-28 23:43:56 UTC
From: frederick.mckenzie-1@kmail.ksc.nasa.gov
Message-ID: <frederick.mckenzie-1-2811941843560001@k4dii.ksc.nasa.gov>
Source record: 115401

In article <24NOV94.17384174@skyfox.usask.ca>, koehler@skyfox.usask.ca wrote:

> I've used normal DBM's as doublers and
> they work nearly as well.

Jim-

Do you think they would work with square wave, rather than sine wave signals? I've been looking for a simple doubler from 24 MHz square wave to 48 MHz (sine wave OK). So far, what I've tried works better for odd harmonics!

73, Fred, K4DII

3565. NE-602 vs SL6440 mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 00:22:11 UTC
From: dshalita@rogue.COM
Message-ID: <m0rCGKj-000EikC@rogue.com>
Source record: 115402

In past mailnotes I've seen references to NE-602 and possibly 602A mixers being susceptible to lowered sensitivity and possibly lower than expected output when strong out of band signals were present on the input, simulatneously with the intended low level input signal.

In my homebrew application, my mixer receives driven input thru a blaun over the freq range of 46 to 70 mhz, but may also have stronger signals at the input from 20mhz to 300 mhz. The mixer output is tuned to 10.7 mhz.

I am wondering if another active mixer such as the more expensive Plessey SL-6440 or ?? (please recommend type) will perform better under these conditions? I am still trying to get a data sheet for the SL6440.
Does it contain an internal oscillator?

Can someone briefly NE-602A to SL6440?

Are the passive mixers such as SBL-1 less susceptible?

Thanks, 73 Dave

--
Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

3566. Anyone know of?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 00:39:53 UTC
From: sdarragh@cisco.com.3
Message-ID: <sdarragh-281194163953@sdarragh-mac.cisco.com>
Source record: 115403

Plans or a kit for a 10m SSB QRP rig? If so drop me an email or phone me
at the below #.

Scott

--

Scott R. Darragh (KE6MGW) "If a man is running down the
3535 Garrett Dr street with everything you own you

Sant Clara, Ca 95054 won't let him get away. That's tackling."
(408)-526-7173 -The Great One Vince Lombardi

3567. Re: Looking for CDROM based parts catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 01:15:33 UTC
From: robboma@aol.com
Message-ID: <3bdvbl$7b7@newsbf01.news.aol.com>
Source record: 115404

In article <3bd2et$o37@news1.cle.ab.com>, efwright@cle.ab.com (Edward F. Wright) writes:

> I am looking for third party that is marketing a CDROM based
> parts catalog for electronic components. I would also be
> interested in an "on line" service. Can anyone give me
> a company name or phone number?

Try Information Handling Services based in Colorado. I don't have their phone number but I think they have a 1-800 number you can get from information: 1-800-555-1212.

They make a few different types of CD-ROM databases. Some can be purchased on 1 or 2 CD's while others take several racks of CD's, can only be leased at several thousand $ per year but have ALL manufacuers data sheets, app notes, drawings atc.

They are now merged with a system called C.A.P.S. Computer aided products selection, which many mfg's data books had printed on the inside cover.

There are also some on-line services available but I don't have their information handy.

Rob.

3568. Re: Where to get RF parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 01:20:13 UTC
From: robboma@aol.com
Message-ID: <3bdvkd$7ch@newsbf01.news.aol.com>
Source record: 115405

Alan Cooney (acooney@netcom.com) wrote:
: I'm getting back into RF design after many years playing with
: computers, and am looking for sources of Unelco caps, Motorola
: MRF devices, tuneable caps, high voltage surface mount caps, and

Also, try:
Pennstock at 1-800-???-???
Digikey at 1-800-digikey
Richardson Electronics at 1-800-???-????
Newark at 1-800-???-????

You can get the full telephone numbers from information at 1-800-555-1212.

Rob.

3569. Re: W1FB's Active CW filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 01:27:54 UTC
From: dws30@p1svp11.amdahl.com
Message-ID: <1994Nov29.012754.19088@ccc.amdahl.com>
Source record: 115416

You may wish to try a switched cap filter such as the MF-8. This allows digital switching of the Q of the filter and thus the BW. the 1995 ARRL Radio Handbook has ckt. many may be interested in.

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com 73 DE KE6IRZ

3570. Re: Need PCB source for Roanoke Doppler system;rec.radio.amateur.misc;rec.radio.amateur.antenna

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 01:58:27 UTC
From: dws30@p1svp11.amdahl.com
Message-ID: <1994Nov29.015827.27327@ccc.amdahl.com>
Source record: 115319

Well I just so happen to be in the process of bringing a RDF Doppler to market.
I have it done for the most part. There has been quite a bit of interest in this topic. My guess is that the Jammers are being more and more of a problem.
A few of the enhancements are more LED's a 360 Deg. readout and the part I'm still sort of working on, broad band use. One antenna array. The problem with the Roanoke is with the antenna array being more along the lines of fixed. This is due to the 1/4 wave stub's and lengths to match up the array correctly.
--

Dave Sharpe Sunnyvale Ca. DWS30@duts.ccc.amdahl.com 73 DE KE6IRZ

3571. Re: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 03:15:11 UTC
From: alanb@sr.hp.com
Message-ID: <3be6bv$t5e@canyon.sr.hp.com>
Source record: 115407

Fred McKenzie (frederick.mckenzie-1@kmail.ksc.nasa.gov) wrote:
: In article <24NOV94.17384174@skyfox.usask.ca>, koehler@skyfox.usask.ca wrote:

: > I've used normal DBM's as doublers and
: > they work nearly as well.

: Do you think they would work with square wave, rather than sine wave
: signals? I've been looking for a simple doubler from 24 MHz square wave
: to 48 MHz (sine wave OK). So far, what I've tried works better for odd
: harmonics!

With a square wave, you have to feed the two ports 90 degrees out of phase.
Otherwise, you just get pure DC at the output (theoretically, anyway).

AL N1AL

3572. Re: Overtone crystal oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 03:29:40 UTC
From: alanb@sr.hp.com
Message-ID: <3be774$t5e@canyon.sr.hp.com>
Source record: 115408

Jeroen Belleman (jeroen@dxcern.cern.ch) wrote:
: In article <3bbbte$eqn@franklin.cc.utas.edu.au>,
: Ian Mitchell <ian.mitchell@research.utas.edu.au> wrote:
: >Well, my next problem involves getting a 3rd overtone crystal (48MHz) ...
: >How do I arrange things to get it to oscillate at 48MHz? ...

: Well, even overtone crystals really prefer to oscillate at their
: fundamental frequency, so this is hardly surprising. There is no
: fundamental difference between normal and overtone crystals. Either
: can be made to oscillate at overtone frequencies. The difference is
: merely a matter of specification and optimization.

: The trick to get a crystal to oscillate on a given harmonic is to
: make C1 and/or C2 look inductive at the lower harmonics, so that the
: conditions for oscillation are not fulfilled at those frequencies.

So far, so good.

: I'd first try to put a 200nH choke, with 1nF in series to block DC
: current, in parallel with C1.

: You should NOT attempt to tune the resonator thus formed to 48MHz.
: It is sufficient that it looks capacitive at 48MHz and inductive
: at 32.

A crystal cannot oscillate near its second harmonic. There is no such
thing as a "second overtone" crystal, so there is no need to worry about
32 MHz. The 200 nH choke would make the 100 pF capacitor look like
a 45 pF capacitor at 48 MHz. A somewhat larger choke would be
appropriate. Say, around 390 nH.

Actually, 50 and 100 pF seem kind of large for a 48 MHz overtone crystal.
Check what the proper load capacitance is for the crystal you are using,
and choose C1 and C2 so the series combination (C1*C2/(C1+C2) is that
value, or a little less, while maintaining C1/C2's 2:1 ratio.

AL N1AL

3573. Re: Ham-Homebrew Digest V94 #351

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 03:49:31 UTC
From: bill@halcyon.COM
Message-ID: <199411290347.AA01843@halcyon.com>
Source record: 115410

>Date: Sun, 27 Nov 1994 22:22:04 -0500
>From: msr@interpath.net (Michael Ramsey)
>Subject: Antique Console Rebuild Questions
>
>I am in the process of cleaning up a nice 1940's Philco console radio (with
>the neat pushbuttons to old 3 letter AM stations like WGN and "Police"
>bands). I am looking for a place to get speaker fabric as close to original
>as possible. Also looking for ideas/sources on how to "repaint" the dial
>that is fading.
>
>I know that this is no "rare-find" radio and that I am putting more into it
>than it is worth. My wife and I like the way it looks in the country-style
>house, and there is a 1930-40ish radio station nearby that sounds _great_
>through this old thing!
>
>Thanks for any input.
>
>msr@interpath.net
>--

Michael,

The old and reliable source for old parts is:

Antique electronic Supply
6221 S Maple Ave.
Tempe, AZ 85283

Phone: (602) 820-5411
FAX: (602) 820-4643

Good luck,

Bill K7RIE
Reply to bill@halcyon.com

3574. Re: NE-602 vs SL6440 mixers

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 04:52:15 UTC
From: reichert@rtsg.mot.com
Message-ID: <3bec1v$sbg@delphinium.cig.mot.com>
Source record: 115411

In article <m0rCGKj-000EikC@rogue.com>, dshalita@rogue.COM
(David Shalita) writes:
|> In past mailnotes I've seen references to NE-602 and
|> possibly 602A mixers
|> being susceptible to lowered sensitivity and possibly
|> lower than expected
|> output when strong out of band signals were present on
|> the input,
|> simulatneously with the intended low level input signal.
|> |>
|> In my homebrew application, my mixer receives driven
|> input thru a blaun
|> over the freq range of 46 to 70 mhz, but may also have
|> stronger signals at
|> the input from 20mhz to 300 mhz. The mixer output is
|> tuned to 10.7 mhz.
|>
|> I am wondering if another active mixer such as the more
|> expensive Plessey
|> SL-6440 or ?? (please recommend type) will perform
|> better under these
|> conditions? I am still trying to get a data sheet for
|> the SL6440.
|> Does it contain an internal oscillator?
|>
|> Can someone briefly NE-602A to SL6440?
|>
|> Are the passive mixers such as SBL-1 less susceptible?
|>
|> Thanks, 73 Dave
|>
|> --

I've used the SL-6440 mixer in my homebrewed 10, 6, 2 meter
gear and found them
to work but they are very large current hogs. Yes you need
and external LO to
drive it. For all its current hogging you get unity
conversion gain instead of loss.
Generally you can expect up to +15dBm output at -1dB Comp,
+30dBm max 3rd Order IIP.

Unit is good up to 150Mhz. Expect at least 800mW of
dissipation @ +12V.

If anyone really needs the data sheets then send me an SASE
and I'll get a copy off
to you.

--
==
| KD9JQ ex KA7IXS,WA8NBD 708-632-6669 Work |
\|/
| Charles H. Reichert 708-358-3827 HOME |
^ ^
| 955 Concord Ln. |
(O O)
| Hoffman Ests., IL. 60195 reichert@rtsg.mot.com |
___.ooO__U__Ooo.___
==
Hmmmm...Could Be!

3575. Rejected by Custodian

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 05:25:30 UTC
From: NAI@quickmail.llnl.GOV
Message-ID: <n1426021916.40244@quickmail.llnl.gov>
Source record: 115321

Mail*Link(r) SMTP Ham-Homebrew Digest V94 #352

!!! Original message was too large.
!!!
!!! It is contained in the enclosure whose name
!!! is the same as the subject of this message.
!!!
!!! A preview of the message follows:

Ham-Homebrew Digest Mon, 28 Nov 94 Volume 94 : Issue 352

Today's Topics:
2m transceiver schematics anyone?
Class AB linear amp question
Ham radio mods
Looking for CDROM based parts catalog
NE-602 vs SL6440 mixers
Need: 75 - 100pf 2/7
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system;rec.radio.amateur.misc;rec.radio.amateur.antenna
Overtone crystal oscillator
Where to get RF parts?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 28 Nov 94 12:41:18 MDT
From: slq6d@cc.usu.edu
Subject: 2m transceiver schematics anyone?

I was wondering... has anyone out there in radioland built a working
(key word) 2m tranceiver? I have been fooling aroud with the idea for a
while
and can't get anything to work. If anyone has, I would be interested in

getting ahold of your schematics, board layouts, etc. Please send me mail,
as
I don't have the time to read the news very often.
Thanks.

Michael Crook
slq6d@cc.usu.edu

Date: 28 Nov 1994 07:44:14 GMT
From: lascal@cortez.its.rpi.edu (Lance Lascari WS2B)
Subject: Class AB linear amp question

Charles N. Burch (n921w1@pnet16.navy.mil) wrote:

Actually....
I think in many cases (vhf/uhf solid state amplifiers), the
ssb/cw switch is only to change the delay of the T/R circuitry. With
SSB you want it long. I think rebiasing (or unbiasing) an amplifier
would cause significant mismatches, so I doubt that in these solid
state designs this is done. Please correct me if I'm off base here
someone!

-L

(I know you're probably building a tube amp, but since this came up,
I'm curious about it myself)

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342

Date: Mon, 28 Nov 1994 13:27:08 GMT
From: parnass@nwsf.ih.att.com (Bob Parnass, AJ9S)
Subject: Ham radio mods

In article <93.1325.7592.0NFB6769@woodybbs.com>,
Karl Moser <karl.moser@woodybbs.com> wrote:

>@SUBJECT:Ham Radio, Scanners, SWL Mods Disk N
> ****** ALL NEW *******
>
> Get Yours Today !!! A must for all Ham Radio Operators, SWL, or
> electronic hobbiest !!
> KE3NF's Radio Mod Collection. !!
> Karl Has collected over 1400 files entries for the modification of
> hundreds of Ham Radio's , Scanners, Short Wave Listeners, TNC'.
> That is OVER 4 1/2 MEGS of Text Mods!!!! (Unzipped)
> Now he is making them advailable to you!! Here's how to order:
> Send 2 Formatted 1.44 3 1/2" Floppies, $10.95, And a SASE

> Or
> Send $14.95 and an SASE

Karl,

I received a phone call from someone who said you had published
at least one of my articles with my name removed. He specifically
cited my review of the Radio Shack PRO-2004, which was previously
published in March 1987 Monitoring Times and The Radio Enthusiast,
February 1987.

Please contact me to discuss this matter and corrective action.

--

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<<<<<< Attached TEXT file named "Ham-Homebrew Digest V94 #352" follows >>>>>>
Received: by quickmail.llnl.gov with SMTP;28 Nov 1994 21:21:58 U
Received: by ucsd.edu; id TAA07400
sendmail 8.6.9/UCSD-2.2-sun
Mon, 28 Nov 1994 19:33:05 -0800 for ham-homebrew-list
Errors-To: ham-homebrew-relay@UCSD.EDU
Sender: ham-homebrew-relay@UCSD.EDU
Precedence: List
Received: by ucsd.edu; id TAA07314
sendmail 8.6.9/UCSD-2.2-sun
Mon, 28 Nov 1994 19:32:53 -0800 for ham-homebrew-ddist
Message-Id: <199411290332.TAA07314@ucsd.edu>
Date: Mon, 28 Nov 94 19:32:45 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@UCSD.EDU>
Errors-To: Ham-Homebrew-Errors@UCSD.EDU
Reply-To: Ham-Homebrew@UCSD.EDU
Precedence: List
Subject: Ham-Homebrew Digest V94 #352
To: Ham-Homebrew@UCSD.EDU

Ham-Homebrew Digest Mon, 28 Nov 94 Volume 94 : Issue 352

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Overtone crystal oscillator

Where to get RF parts?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

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> Or
> Send $14.95 and an SASE

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February 1987.

Please contact me to discuss this matter and corrective action.

--

==========
Copyright 1994, Bob Parnass, AJ9S
AT&T Bell Laboratories - parnass@ihlpf.att.com - (708)979-5414

Date: 28 Nov 1994 17:02:21 GMT
From: efwright@cle.ab.com (Edward F. Wright)
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Internet : dshalita@rogue.com
AMPR.ORG :lp.w6mik.ampr.org [44.16.0.29]
AMPR.ORG :w6mik.ampr.org [44.16.0.26]
7833 Cantaloupe Ave. Van Nuys, CA 91402

Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 2/7

>>> Continued from previous message
Antique Electronic Supply Co. 602-820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Appleseed Electronics Inc. 219-489-9802
P.O. Box 8228
Fort Wayne, IN 46898 Parts

ARE Communications Ltd. 44-081-997-4476
6 Royal Parade
Hanger Lane, Ealing HF kit for ICOM R-7100 to 200 kHz !
London W5A 1ET & SSB kits for Icom R-100 and R1.

ARRL: Free Getting Started in Ham Radio Info 800-326-3942
225 Main Stret: 203-666-1541: Fax 203-665-7531: QRP Books, QST Mag.

Newington, CT 06111. ARRL BBS 203-666-0578. Compuserve 70007,3373

Arrow Electronics Inc. 800-932-7769: Note, No more Catalog
1860 Smithtown Avenue Minimum $25.00 per Item Line ordered.
Ronkonkoma, NY 11779. Components distributor to the Industry.

A.R.S. 602-820-5411
Arizona Need address Tubes

Austin ARS 800-423-2604: 512-454-2994
5325 North I-35 Ham Radio New and Used
Austin, Texas. 78723 Yaesu, Alinco and Cushcraft Ant.

Azden Communications Div.:Orders only 800-643-7655: Fax516-328-7506.
147 New Hyde Park Rd. Other inquiries 516-328-7501 Parts and service.
Franklin Sq. NY.11010 New FM Tranceivers for 10-6-2-220-440 bands.

Bauman:Jeff, WB5KZW. 313-435-9922: 313-661-0202 Jeff had 1500 Tubes
6647 Stonebridge East, for sale as of December,1993
West Bloomfield, MI 48322

BCD Electro 214-343-1770
P.O. Box 830119
Richardson, TX 75083 Catalog, parts, etc.

Bigelow Electronics No number listed
P.O. Box 125
Bluffton, OH 45817 Parts, Catalog $2. Flyer 1 stamp

Brigar Electronics 607-723-3111 or FAX 607-723-5202: Free flyer with
7-9 Alice St lots of bargains with quantity pricing.$25 min.
Binghampton, NY. 13904 Electrolytics, Connectors, Solid-State. etc.
We buy excess Electronic inventory.

Cable:John, 619-258-7931
Address needed Tubes from 1941 to 1960, new.

Cable Experts (Orders only) 800-828-3340: Tech info 708-506-1886
113 McHenry Rd. FAX 708-506-1970. Coax, Connectors, Rotor Cable,
Buffalo Grove, IL. 689-1797. Ant.Wire & Baluns.SASE for literature.

C-COMM A.S: Dale Osterud 800-426-6528 206-784-7337: FAX 206-784-0541
6115 15th N.W. AEA, Alinco, Icom, Kantronics, Kenwood and Yaesu
Seattle Wa. 98107 Ham Radio New and Used Call for a quote.

CeCo Communications. 800-221-0860: 212-646-6300
2115 Avenue X Vacuum tubes
Brooklyn, NY 11235

Circuit Board Specialists June 1993 Mailed returned,
P.O. Box 969 no forwarding address
Pueblo, CO 81002 (Various kits & projects, P.C. boards)

Circuit Specialists Inc. 800-528-1417
Box 3047 Electronic components incl. RF parts

Scottsdale, AZ 85271

Circuitwerkes Co. 904-331-5999: FAX 904-331-6999
No address Circuit Boards I believe. Not aware who this is.???

C & N Electronics 800-421-9397: 612-429-9397
6104 Egg Lake Road FAX 612-429-0292
Hugo, MN 55038 Buy & sell tubes

C.O.M.B Now called Daymark, 800-328-0609
Minneapolis MN Update to follow on receipt of new Catalog.

Comm Center, The ??? Laurel MD No longer Listed

Communications Center ??? Lincoln NE No longer Listed

Communication Concepts Inc. 513-426-8600
508 Millstone Drive HF linear amp kits etc.
Xenia, OH 45385

Communications Specialist 800-584-0547:714-998-3021: FAX 714-974-3420
426 West Taft Ave. Automatic Morse Station Identifier.
Orange, CA. 926655-4296 CTCSS Tone Encoders/Decoders

Consolidated Electronics 800-543-3568 Dayton OH. DTMF decoders etc.

CQ RADIO KITS 416-775-9119
Box 1546 QRP xcvrs, rcvrs, keys etc.
Bradford, ONTARIO Canada L3Z 2B8

Crystek Crystals 800-237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

C & S Electronics 203-866-3208
P.O. Box 2142
Norwalk, CT 06852-2142 Specialty RF chips etc.

Curtis Electro Devices 415-964-3846
Box 4090
Mountain View, CA 94040 Keyer chips etc.

Cushcraft Corp. 603-627-7877: FAX 603-627-1764: Telex 4949472
P.O. Box 4680: 48 Perimeter Rd.
Manchester, Nh 03108

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

CW Electronic Sales Denver CO No longer Listed

CW Forever Key Co. Send stamp for list.
P.O. Box 659
Manchester, MO 63011 Buy & sell keys etc.

Cy-ance Kit, 501-839-8293
14786 Slate Gap Road
West Fork, AR 72774 80 different kits

Daily Electronics 800-346-6667: 206-896-8856: FAX 206-896-5476
10914 N.E. 39th Street
Vancouver, WA 98682 Tubes, all types.

Dallas Solar Power 800-345-4913
P.O. Box 611927
San Jose, CA 95161 Photovoltaics, Solar cells, chargers

Data Display Products 800-421-6815
Inglewood CA LED manufacturers, deal in volume sales to Industry.
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 3/7

>>> Continued from previous message
Davilyn Corp. 800-235-6222 xct.CA: 818-787-3334 CA: FAX 818-787-4732
13406 Saticoy St. Electronic Tubes. Good Prices, Call for Catalog
North Hollywood, CA 91605-3475 Also Surplus Electronic Gear.

DC Electronics 800-423-0070: 602-945-7736
P.O. Box 3203 FAX 602-994-1707
Scottsdale, AZ 85271 Components. Many ICs.

Debco Electronics. Orders 800-423-4499: Info 513-531-4499: No Min.
425 Edwards Rd. FAX 513-531-4455 Millions of Chips, Transistors,
Cincinnati, OH. 45209: and Electronic Components. Excellent Prices.

Delaware Amateur Supply 800-441-7008: 302-328-7728
71 Meadow Road Ham Radio New and Used AEA,Alinco,Cushcraft,
New Castle, DE. 19720 Icom,Kenwood,Mosley,Tentec,Yaesu and more.

Derrick Electronics Broken Arrow OK No Longer Listed

DH Distributors 316-684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Ditek Industries -=[NEED ADDRESS]=- 800 762-9328

Drake, R.L. 800-543-5612 and for catalogs 800-937-2534
P.O.Box 3006 513-866-2421 Communications products
Miamisburg, OH. 45342 Call for specification sheets.

DWM Enterprises (No number listed)
1709 N. West Avenue #103
Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

Duracell Battery technical support line at 800-544-5454 ext. 3281.

EGE Inc. National 800-336-4799 orders and quotes. or nearest store.

EGE Inc. 800-572-4201: 703-643-1063: Service 703-494-8750
14803 Build America Drive. Bldg.B. Alinco, Icom, Kenwood, Ten-Tec
Woodbridge, VA. 22191. and Yaesu. Towers and Packet acc.

EGE Inc. New England area except NH. 800-237-0047

EGE Inc. 800-336-4799: Service and Info 603-898-3750
8 Stiles Rd.
Salem, NH. 03079

E.H.Yost 608-643-3194: FAX 608-643-4439
7344 Tetiva Rd. Ni Cad Batteries and Packs
Sauk City, Wi. 53583

Electrogadgets Inc. Need Phone Number.
P.O. Box 2065
Morris Township, NJ 07962 Digital voice recorder kits $20.00

Electron Tube Enterprises 802-879-0611
Box 311
Essex, VT 05451 Tubes

Electronic Bits 'N Pieces 303-361-6530
P.O. Box 31654
Aurora, CO 80041 Tubes, transistors, diodes, chips

Electronic Equipment Bank Vienna VA 800-368-3270

Electronics Exchange 314-426-3056
No address given
St. Louis, MO Electronics suurplus. Call for catalog.

Electronic Goldmine 602-451-7454 Fax 602-451-9495
P.O. Box 5408 (again the name says it all!)
Scottsdale, AZ 85261

Electronic Rainbow 800-428-3500 317-291-7262
6254 LaPas Trail
Indianapolis, IN 46268 Various kits

Elktronics Northeast Co. 603-525-4001
Rt. 1 Box 789
Hancock, NH 03449 VFO kit, RF amp, filters etc.

Emerson Radio Corp. 800-695-0095: Fax 812-386-6502
6 Engine Road National Parts Distribution.
Parsippany, NJ. 07054-0432

Erickson Communications Chicago IL 800-621-5802

Fair Radio Sales. 419-227-6573:419-223-2196: FAX 419-227-1313
1016 E. Eureka Box 1105 Parts, transformers, power supplies,

Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send S.A.S.E.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

Falkner Enterprises of America Inc.
312 River Street 319-687-2479
Sabula, IA 52070 Batteries, electronic parts, catalog

FAR Circuits (N9ATW) (No number listed)
18 N 640 Field Court
Dundee, IL 60118 (P.C. boards etc.)

Fordham Radio SUpply 800-695-4848
260 Motor Parkway
Hauppauge, NY 11788 Tools and test equipment

Fuller,R.M. Co. 800-626-6662
902 Industry Drive
Seattle, WA 98188 DTMF decoder chips & info.

Gateway Electronics 800-669-5810 Orders
8123 Page Blvd. 314-427-6116
St. Louis, MO 63130 Parts, gadgets $10 min.

G.I.S.M.O Rock Hill SC 800-845-6183

GTE Microcircuits Tempe AZ 800-828-7280

G4ZPY Paddle Keys no number listed
c/o Charles Tryor, N4LMY
7809, 10th Avenue S.
Birmingham, AL 35206 Various keys

Ham Key Co.The: Division of Ham Radio Center Inc. 800-527-0807
8342 Olive Boulevard
St. Louis, MO 63132 (Paddles, keyers, SWR meters etc.)

Ham Radio Outlet, West Coast Branches and Western Canada 800-854-6046

Ham Radio Outlet 800-854-6046 503-598-0555
11705 S.W. Pacific Hwy. New and Used Ham Supplies
Portland, Or. 97223

Ham Radio Outlet 800-854-6046 415-342-5757
999 Howard Ave. New and Used Ham Supplies
Burlingame, Ca. 94010

Ham Radio Outlet 800-854-6046 415-534-5757
2210 Livingston St. New and Used Ham Supplies
Oakland, Ca. 94606
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 4/7

>>> Continued from previous message
Ham Radio Outlet 800-854-6046 408-736-9496
510 Lawrence Express Way #102. New and Used Ham Supplies
Sunnyvale Ca. 94086

Ham Radio Outlet 800-854-6046 714-533-7373
933 N Euclid St. New and Used Ham Supplies
Anaheim, Ca. 92801

Ham Radio Outlet 800-854-6046 818-988-2212
6265 Sepulveda Blvd. New and Used Ham Supplies
Van Nuy's, Ca. 91411

Ham Radio Outlet 800-854-6046 619-560-4900
5375 Kearmy Villa Rd. New and Used Ham Supplies
San Diego, Ca. 92123

Ham Radio Outlet, Mountain 800-444-9476

Ham Radio Outlet 800-444-9476 303-745-7373
8400 E. Llif Ave. #9. New and Used Ham Supplies
Denver,, Co. 80231

Ham Radio Outlet 800-444-9476 602-242-3515
1702 W. Camelback Rd. New and Used Ham Supplies
Phoenix, Az. 85015

Ham Radio Outlet, New England and Eastern Canada. 800-444-0047

Ham Radio Outlet 800-444-0047 603-898-3750
224 N. Broadway New and Used Ham Supplies
Salem Nh. 03079

Ham Radio Outlet, Mid Atlantic. 800-444-4799

Ham Radio Outlet 800-444-4799 703-643-1063
14803 Build America Dr. New and Used Ham Supplies
Woodbridge, Va. 22191

Ham Radio Outlet, Southeast, 800-444-7927

Ham Radio Outlet 800-444-7927 404-263-0700
6071 Bulford Hwy. New and Used Ham Supplies
Atlanta, Ga. 30340

Ham Station,The 800-729-4373: 812-422-0231: FAX 812-422-4253
P.O. Box 6522: 220 N. Fulton Ave. Service info 812-422-0252
Evansville, IN. 47719-0522 Warranty service Icom,Kenwood and Yaesu

Hamtronics, Inc. 716-392-9430: FAX 716-392-9420 Data modems
65-D Moul Road Repeater kits, Rpt-controller kits, Preamps and
Hilton, NY 14468-9535 Rcv. converter kits and Tone decoder/encoder
FM Transmitters and Receivers. Choice of a kit or factory wired unit.

Harmon Kardon Inc. 800-645-7484 516-496-3400
240 Crossways Park West Audio Equip,ent Mfg.
Woodbury, NY. 11797 National Parts Distribution.

Heathkit Educational Systems 800-253-0570: FAX 616-925-4876
P.O. Box 1288 Electronic and Computer Education
Benton Harbor MI. 49023 Kits or wired units. Free Catalog

Heathkit Of old. ;-(note the tear in the eye. 800-253-0570
Old Heathkit replacement parts until depleted plus schematics and
manual copies for some of the old Heathkits. Call with model # and or
part number. They may still have it.

Henry Radio. Orders 800-877-7979:Info 213-820-1234:FAX 310-826-7790
2050 S Bundy Dr. International & non Tch Tone 310-820-4556
Los Angelas, CA. 90025. Ham Radio New and Used. Accesories, Ant.,
Towers plus manufactures and sells Linear Amplifiers.

Hosfelt Electronics 800-524-6464: FAX 614-264-5414
2700 Sunset Blvd. No minimum, $3.75 S&H. Surplus electronics.
Steubenville OH 43952

Howes,C.M. Communications Phone: 44 327 60178
Eydon, Daventry,
Northants NN11 6PT. England
QRP, transmitters, receivers, misc. "The Heathkit of England",
though with assembly manuals not as detailed, also without the
intricate mechanicals of Heathkits. [Carried by Townsend Electronics
(at least) in the US] Townsend Electronics is listed here.

H & R Company. Herbach and Rademan. 800-848-8001: 215-788-5583
P.O.Box 122: 18 Canal Street: FAX 215-788-9577
Bristol PA 19007-0122 Tools, parts etc. Min. $25. Free catalog

HSC Electronic Supply. Halted Specialties Co. 800-442-5833 except CA.
3500 Ryder Street in CA. and outside US 408-732-1573
Santa Clara, CA 95051 Surplus (new) electronics;New & used test
equipment. Minimum order $10 ($2 handling charge under $20), plus UPS
shipping cost. Has three stores, of which 3500 Ryder Street is one.

Icom America Inc.206-454-8155:FAX 206-454-1509:Free Cat.206-450-6088
2380 116TH Ave Ne TELEX 152210 Icom Amer Bellevue
Bellevue, Wa 98004 National Parts, Service and Info.

Idiom Press (No phone given)
Box 583 Computer controlled keyer kit
Deerfield, IL 60015

International Components Corp.800-325-0101: FAX 503-336-4400
1803 NW Lincoln Way Cabinets, components & vacuum tubes

Toledo, OR 97391

International Crystal Mfg Co. 405-236-3741
10 North Lee Street Crystals!
Oklahoma City, OK 73102 Not sure which address??

ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825
P.O. Box 26330: 701 W. Sheridan
Oklahoma City OK 73126-0330

J & S Radio Sales 203-456-2667
Address Needed! G.E. & Motorola surplus radios.
Anytown, CT

Jameco Electronics 800-831-4242: 415-592-8097: FAX 800-237-6948
1355 Shoreway Road Electronic components $30 min. order
Belmont, CA 94002

JAN Crystals 800-526-9825: 813-936-2397
P.O. Box 06017: 2341 Crystal Drive: Crystals
Ft. Myers, FL 33906-6017

Javanco Orders 800-528-2626: 615-244-4444: FAX 615-244-4446
501, 12th Avenue S. BBS: 244-4445
Nashville, TN. 37203 Surplus parts etc.

J Com. Orders only 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway. QRP HT rigs for 80 - 6m, $350.00, HamBase for PC,
Victor, NY 14564 DSP Filters, Personal Autopatch & Rig/PC Interface.
Tied in with Ramsey Electronics.

JDR Micro Devices 800-538-5000: 800-538-5001
2233 Branham Lane Computers and components
San Jose, CA 95124

Johnson Shop Products 408-257-8614: FAX 408-253-6288
P.O. Box 160113 Catalog $1 or two stamps
Cupertino, CA 95016 New & some used electronic parts

Jolida Tube Factory 800-783-2555
10820 Guilford Road Vacuum tubes
Annapolis Junction, MD 20701
>>> Continued to next message

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Sun, 27 Nov 1994 21:13:00 -0500
From: brian.carling@acenet.com (Brian Carling)
Subject: Need: 75 - 100pf 7/7

>>> Continued from previous message
Skycraft Parts and Surplus Inc. 407-628-5634 FAX 407-647-4831

P.O. Box 536186 Surplus parts etc.
Orlando, FL 32853-6186

Small Parts, Inc. 305-557-8222 Order department
13980 NW 58th Court 305-557-7955 Customer Service (ask for Mirta)
P.O. Box 4650 305-557-8004 Custom-made Parts (ask for Ziggy)
Miami Lakes, FL 33014-0650. 800-423-9009 Toll free FAX line
305-558-1255 Catalog (ask for Elizabeth)
305-557-8005 Non-standard Sizes of catalog parts (ask for Eric)
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets,
tools, wire-size drill bits (as in #61 size for PC board holes).

Smith: Dick, Electronics c/o American Electronics. 8GG9\?R-1373
P.O. Box 301: 164 Southpark Blvd.
Greenwood, IN 46142 Kits, parts. Free bulletin

Sony National Information. Call for your area dealers. 800-222-7669
Sony Parts Seattle Wa 206-763-8853
Sony National Parts 800-488-7669
Sony National Info and or problems of Warranty. 800-282-2848

Southpaw Electronics 800-851-8870: 516-352-7070: FAX 516-775-5091
P.O. Box 886 Parts, min $25. Free catalog
New Hyde Park, NY 11040-0311

S & S Engineering 301-416-0661
14102 Brown Road FAX 301-416-0963
Smithsburg, MD 21783 ($270 CW transceiver kit)

Standard Amateur Radio Products, Inc. 312-763-0081 (Voice)
P.O Box 48480 312-763-3377 (Fax)
Niles, Il 60714. Mfg of VHF-UHF Amateur Radio Equipment and acc.

Steinmetz Electronics 219-931-9316
7519 Maplewood Avenue Tubes
Hammond, IN 46324

Sun Remarketing 800-821-3221: 801-755-3360
P.O. Box 4059 AppleII series, Lisa, Macintosh service
Logan, UT 84321-4059 and related accessories plus refurbishing.

Sunset Electronics (No number listed)
12145 Alta Carmel Ct. Suite #250-139
San Diego, CA 92128 ("Build your own ham radio")

Surplus Center 800-488-3407
1015 West "O" Street (the name says it all a must have catalog!)
P.O. Box 82209 (cheapprices)
Lincoln, NE 68501-2209

Surplus Sales of Nebraska 402-346-4750 FAX 402-346-2939
1502 Jones Street
Omaha, NE 68102 $3.00 catalog (with $3 coupon)

Symphonic National Parts and Service 800-242-7158

Tannenbaum,A.G. 516-887-0057 FAX 516-599-6523
P.O. Box 110
E. Rockaway, NY 11518 Parts, High voltage capacitors, free catalog

Tejas RF Technology. 713-879-9300: FAX 713-879-9494
P.O.Box 720331 Mini Keyer, AF Filter Tejas Backpacker-II QRP kit
Houston TX 77272-0331 Many other Kits and things.

Ten-Tec 800-833-7373: 615-453-7172: FAX 428-4483: New Kit Catalog
1185 Dolly Parton Parkway. Repair Dept. 615-428-0364 ^^^ ^^^ ^^^^^^^
Sevierville, TN. 37862 Tranceivers, QRP gear and Kits. Call

Texas Tower A.S. 800-272-3467: 214-422-7306: FAX 214-881-0776
1108 Summit Ave. Suite #4 Yaesu Dealer. Ham Radio New and Used
Plano,TX. 75074 Excellent Yaesu buys. Call for a quote.

Tiare Publications 414-248-4845
P.O. Box 493W
Lake Geneva, WI 53147 (Books on QRP etc.)

Townsend Electronics Inc. 219-594-3661
Box 415 S Howes HF Kits from England
Pierceton, IN 46562 See "Howes,C.M." listing above.

Tucker Surplus Sales 800-527-4642 ext. 135: 214-340-0631
1717 Reserve St. Surplus radio & test equipment
Garland TX 75042 New Amateur Radios, Ant & Accessories

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Unity Electronics No number listed
P.O. Box 213 Vacuum tubes
Elizabeth, NJ 07206

UPI Communications Systems Saddlebrook NJ 800-526-527?

VAP Products Mentor Oh 800-321-9668

Vibroplex Co. Inc. 800-262-8387
98 Elm Street
Portland, ME 04101 (Keys, bugs etc.)

W1FB No phone #
Box 250 QRP CW transmitter kits
Luther, MI 49656

Yaesu USA 800-255-9237: 310-404-2700 Communication Products.
17210 Edwards Rd. National Parts and Service
Cerritos, Ca 90701 plus Specification Sheets.

AM International publishes a column in ELECTRIC RADIO magazine, which is
probably the best source for articles on vintage amateur radio and AM.

A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

The Northern California QRP Club will do another run of the
classic
NorCal-40, after the first of the year. Details will be announced in
the Dec. issue of QRPp, our 72 page, 100% QRP, quarterly.
The rigs are slightly under $100.
The Sierra kits are being shipped now.
If you want information on the kits or joining our super active QRP
group, send me a packet or card or telephone.
WA6GER @ KM6PX.#NOCAL.CA.USA or 3241 Eastwood Rd., Sacramento, Ca.,
95821, or (916) 487-3580. Do not send any money yet! Write for info.

PLEASE SEND ADDITIONS and/or CORRECTIONS to:
Brian Carling AF4K @ W3INK or to 1:109/418

~ SLMR 2.1a ~ Sticker seen on the Enterprise computer: Motorola Inside

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Date: Mon, 28 Nov 1994 14:28:22 GMT
From: P06288@email.mot.com (Jim Gerwitz(N7QHK))
Subject: Need PCB source for Roanoke Doppler system

If anyone has built the Roanoke Doppler system displayed in the TAB book,
"TRANSMITTER HUNTING, Radio Direction Finding Simplified", by Moell and
Curlee, I am looking for two things:

1. A source for the PCB to build the electronics and the display, and;

2. any information you might share on enhancements, problems, etc.

Thanks in advance.

N7QHK
Jim Gerwitz

Internet add: P06288@email.mot.com

Date: Mon, 28 Nov 1994 14:11:19 GMT
From: P06288@email.mot.com (Jim Gerwitz(N7QHK))
Subject: Need PCB source for Roanoke Doppler
system;rec.radio.amateur.misc;rec.radio.amateur.antenna

I am trying to find a source for the Roanoke Doppler system described in the
book "Transmitter Hunting, Radio direction finding simplified", by J Moell
and
T Curlee.

Also, anyone who has built this unit that has information on enhancements
etc., I would appreciate your inputs.

Jim Gerwitz
N7QHk

Address: P06288@email.mot.com

Date: Mon, 28 Nov 1994 09:04:24 GMT
From: jeroen@dxcern.cern.ch (Jeroen Belleman)
Subject: Overtone crystal oscillator

In article <3bbbte$eqn@franklin.cc.utas.edu.au>,
Ian Mitchell <ian.mitchell@research.utas.edu.au> wrote:
>Well, my next problem involves getting a 3rd overtone crystal (48MHz) to
oscillate
>at that frequency using an MC3362. The circuit as shown below with C1=100pf
and
>C2=50pf gets the osc going at the fundamental, ie 16MHz.
>
>How do I arrange things to get it to oscillate at 48MHz? Do the fundamental
and
>2nd overtone need to be suppressed, and if so, how?
>

(Schematic diagram deleted)

Well, even overtone crystals really prefer to oscillate at their
fundamental frequency, so this is hardly surprising. There is no
fundamental difference between normal and overtone crystals. Either
can be made to oscillate at overtone frequencies. The difference is
merely a matter of specification and optimization.

The trick to get a crystal to oscillate on a given harmonic is to
make C1 and/or C2 look inductive at the lower harmonics, so that the
conditions for oscillation are not fulfilled at those frequencies.

I'd first try to put a 200nH choke, with 1nF in series to block DC
current, in parallel with C1.

You should NOT attempt to tune the resonator thus formed to 48MHz.
It is sufficient that it looks capacitive at 48MHz and inductive
at 32.

Best regards,
Jeroen Belleman
jeroen@dxcern.cern.ch

Date: Mon, 28 Nov 1994 20:09:17 GMT
From: ghiscox@netcom.com (George L. Hiscox)
Subject: Where to get RF parts?

Alan Cooney (acooney@netcom.com) wrote:
: I'm getting back into RF design after many years playing with

: computers, and am looking for sources of Unelco caps, Motorola
: MRF devices, tuneable caps, high voltage surface mount caps, and

Try RF PARTS, San Marcos, CA. (619) 744-0900. Look for their
advertisements in QST and other hammy publications.

George

George L. Hiscox	Very funny Scotty...Now
ghiscox@netcom.com	beam down my clothes!!!
WA6RIK @ WB6YMH.#soca.ca.usa.na	^^^^^^^^^^^^^^^^^^^^^^^^

End of Ham-Homebrew Digest V94 #352
****

3576. schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 07:35:08 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <94120116450665@posnet.co.uk>
Source record: 115359

In a message of 25 Nov 94 James Longworth wrote to All:

JL> Does anyone know where i can ftp (or otherwise) schematics/docs/etc..
JL> for a simple 1200bps TNC for use on 2 Metres?

Hello James. Look around for a file caled BAYCOM. This is a simple little TNC using a modem chip and few other components. Almost all the packet radio s/w will drive it OK and most make reference to it in their docs.

It's easy to get over here in the UK from FidoNet BBSs. Let me know if you can't find it.

Regards Paul G4DCV. Internet :paul.whatton@sharpbbs.centron.com

--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3577. Re: schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 08:02:31 UTC
From: wasmir@dlep1.itg.ti.com
Message-ID: <wasmir.26.00312F20@dlep1.itg.ti.com>
Source record: 115327

In article <3b4rs7$a34@lazar.apana.org.au> longi@zikzak.apana.org.au (James Longworth) writes:
>From: longi@zikzak.apana.org.au (James Longworth)
>Subject: schematic for simple tnc?
>Date: 25 Nov 1994 14:20:40 GMT

>Does anyone know where i can ftp (or otherwise) schematics/docs/etc.. for
>a simple 1200bps TNC for use on 2 Metres?

>Or... Does anyone know of anyg good amateur ftp/www sites?

>73... VK3XJL

>--
> ======= LoNGi ======= Internet: longi@zikzak.apana.org.au
> James P Longworth WWW page: http://zikzak.apana.org.au/~longi
> ====================== Packet : VK3XJL@VK3APP

Hello James, I have schematics for the famous Baycom Modem but can't figure out how to send it to you. Send me a FAX number and I'll send it today.

The program I used for that modem was the Baycom v1.7 (thanks to Paul J. Piercey, VO1HE). The program is available via anonymous ftp at ve4umr.ampr.org at the /pub/terminal sub-directory.

GL es 73. Mabuhay from Philippines...de DU2BBH (Wasmir)

3578. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 08:04:21 UTC
From: claude@bauv111.bauv.unibw-muenchen.de
Message-ID: <claude.786096261@bauv111>
Source record: 115412

kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:

>Anyone know anything about using overtone crystals in crystal
>filters?

Overtone crystals are not suited for filter use, i.e. the overtone
mode cannot be used. In fact, the fundamental mode could be used,
but there is not more significance to use an overtone crytal.
I ignore if very special filter circuits exist using many modes
of the same crytal. I never heard of them.

--
Claude F. (claude@bauv106.bauv.unibw-muenchen.de)

This message may contain opinions which are not shared by my employer.
The facts can speak for themselves.

3579. INFO REQ ON 2M AMPLIFIER DESIGN

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 08:43:42 UTC
From: itbkl@puknet.puk.ac.za
Message-ID: <itbkl.28.786098622@puknet.puk.ac.za>
Source record: 115413

Hi.

I need information on high power 2m amplifiers.
I want to use it for EME.

Does anybody know of any kits that may be available ?
The ARRL handbook mentions that kits are available from time to time, but
from who, and how often is often?

Any info appreciated.

Please Email direct if possible.

Keith
ZS6TW
Potch Univ. Email : Tel:
Potchefstroom itbkl@puknet.puk.ac.za Voice (0148) 992126
West Transvaal FAX (0148) 992799
South Africa

3580. Infos/Help for a HF PA Project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 09:50:14 UTC
From: wws465@as-nwfs-1.ku-eichstaett.de
Message-ID: <wws465.33.2EDAF956@as-nwfs-1.ku-eichstaett.de>
Source record: 115322

Hello!

First of all:
We are a group of young ham's here in Ingolstadt/Germany & some of us
(including me) want to build a power amplifyer for HF.
We found some projects in the ARRL Handbooks, so I write to this
american newsgroup, for some further informations or hints about them.

We are thinking about the projects in the 1994 Handbook:
a) A legal Ampliffier for 160 through 10 Meters p.30-44
or b) A 1500-W Linear Amplifier Using 3-500Z Tubes p.30-53

OK - the output of them isn't quite low & we still are beginners, but we
think by time and with the help of our local OM group we'll succeed.

But why I write this to u is because:
-Do you have any further informations?
-Have you hints after building one of them?
-Do you even have better plans for better PA's (not for a higher output-
1.5 kW is pretty enough & in DL maximum (legal) output is 750 W(!), but
for anything you would recommand more (please don't recommand us here to
stop this project. We want to have problems and we want to solve them!
We want to learn!)
-Is it possible to improve them, to work with them on all HF bands?!

If you think you know something about that, that could help us - please
mail!

73 de Klaus Neudecker, DG7NFT

----
e-mail: Klaus.Neudecker@KU-Eichstaett.de Klaus Neudecker
call: DG7NFT Neubaustrasse 4
PR: DG7NFT @ DB0IGL.#BAY.DEU.EU 85049 Ingolstadt
G e r m a n y
,,,,, Tel.+49-841-33782
___oOOo_(_o o_)_oOOo_____________________________________
(_)

3581. Re: Drake T4XB+ HQ170AC-VHF. Keep or Dump?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 12:14:53 UTC
From: vancleef@bga.com
Message-ID: <3bf5vt$8cg@ivy.bga.com>
Source record: 115414
Cross-posted to: rec.radio.amateur.misc,rec.radio.swap,rec.radio.amateur.equipment,rec.antiques.radio+phono,rec.radio.shortwave,rec.radio.amateur.homebrew

This really doesn't belong in rec.antiques.radio+phono. I see it was
crossposted to some of the more appropriate newsgroups, and I am
leaving the crosspostings in this response, because my response to the
questions will give some idea what rec.antiques.radio+phono is about.
I have set followups to rec.radio.amateur.equipment.

In article <CzzLKJ.AsI@nntpa.cb.att.com>,
Joseph Weiner <jsw@physics.att.com> wrote:
>I am getting back on the air after many years. I have a
>Drake T4XB transmitter and Hammarlund HQ170AC-VHF receiver
>that I had bought in the sixties. It is clear to me that
>the Hammarlund has got to go. The question is:

Our group's focus is on home entertainment items---acoustic phonos and
old radios, primarily from the 1920-50 period. While there is some
discussion of tube-type "boatanchor" communications radios, it is
generally of older general-coverage sets. The mail list
boatanchors@gnu.ai.mit.edu is a good place to get information on things
like HQ-170's and old transmitters.
>
>1. Is it worth getting a used Drake R4B receiver from somewhere
> or is equipment so much better these days that it is not
>worth bothering?
Most of us would rather have a Philco chairside, an old Atwater Kent,
or a Hallicraftrs SX-17. I've got a postwar Magnavox, an HQ-150, and
an RME-45, all working fine, and wouldn't trade any of them for a Drake.
Can't get the French and Canadian (french) shortwave stations with a
Drake.

>2. What is the going rate to buy an R4B and where would
> I get one?
Not very likely here. A Drake is a ham receiver, not home
entertainment.

>3. What would the going rates be to sell the T4XB or HQ170
> and where would I sell them? Are they collectors' items?
Once again, this is not an amateur radio newsgroup.

>4. How have xmtrs & rcvrs improved in the last 25 years?
> Sensitivity, selectivity, stability, features, programmability?

Define "improved." A lot of our readers think that a Victor
Orthophonic is superior to an electric phonograph.
>

These questions are about getting active in ham radio, and there are newsgroups that are directed toward that purpose, which this item was posted to. It shouldn't have been crossposted here. This is an antiques group, created to take discussion of home entertainment stuff out of rec.antiques. There are several amateur radio groups, and we don't attempt to fill any gaps in them in this group---if, indeed, there are any.

--

****
Hank van Cleef vancleef@bga.com vancleef@tmn.com
****

3582. Re: W1FB's Active CW filter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 12:34:05 UTC
From: drted@ix.netcom.com
Message-ID: <3bf73t$hs5@ixnews1.ix.netcom.com>
Source record: 115415

In <3b6d85$5da@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor) writes:

>
>Greetings,
>I am building the active CW filter on page 68 of W1FB's QRP
>Notebook (by Doug DeMaw - 2nd edition). On page 67 Doug says
>"Although 747 op amps are specified....the filter noise will be
>substantially less if you use TLO82s for U1 and U2. They are
>directly interchangeable with the 747s."
>
>After checking a few catalogs it seems that LM747CN Dual 741 Op Amp
>is a 14 pin device and the TLO82CP Low Noise JFET Op Amp is an 8
>pin device. How can these parts be 'directly interchangeable'?
>
>Am I making an error?
No... Not at all...
Check the pinouts of the -082's. You should find that they match up
with the central pinout of the 747. Just set the 082's into the
approriate holes for the 747's.

>
>PS - The filter will be used with the 80 meter Neophyte DC receiver
>I just finished -- this radio works GREAT -- better than I expected
>for such a simple design.
>
>73
>Mike, AA2UJ
>mmarmor@pluto.njcc.com
>
Good luck... Ted..

3583. Overtone Crystals in filters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 14:49:22 UTC
From: mack@mails.imed.COM
Message-ID: <9410297861.AA786131999@mails.imed.com>
Source record: 115417

Bill Kirkland (VE3JHU) asked about using overtone crystals in filters.

Bill, Ian Mithchell and I had an exchange several months back on this subject. I actually built a test filter from some 48 MHz microprocessor crystals I had laying around. I tested it on the HP netowrk analyser and it worked pretty well.

Use the various articles that have appeared in QST and Communications Quaterly as a starting point. All of the methods and formulas in those articles work for overtone crystals. The main problem is that the crystals have a higher equivalent series resistance. This means that in order to get low insertion loss, you have to have a fairly high termination impedance.

Ray Mack
WD5IFS
mack@mails.imed.com

3584. Re: Drake T4XB+ HQ170AC-VHF. Keep or Dump?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 16:18:25 UTC
From: mack@ncifcrf.gov
Message-ID: <D01EMp.DI2@ncifcrf.gov>
Source record: 115318
Cross-posted to: rec.radio.amateur.misc,rec.radio.swap,rec.radio.amateur.equipment,rec.antiques.radio+phono,rec.radio.shortwave,rec.radio.amateur.homebrew

In article <CzzLKJ.AsI@nntpa.cb.att.com> jsw@physics.att.com (Joseph Weiner) writes:
>I am getting back on the air after many years. I have a
>Drake T4XB transmitter and Hammarlund HQ170AC-VHF receiver
>that I had bought in the sixties. It is clear to me that
>the Hammarlund has got to go. The question is:
>
>1. Is it worth getting a used Drake R4B receiver from somewhere
> or is equipment so much better these days that it is not
>worth bothering?
>2. What is the going rate to buy an R4B and where would
> I get one?
2~
Try the Smithsonian |-)
2~ Just kidding welcome back. About 15 years ago everything
changed to synthesised rigs. You can get a used one for quite cheap
from 10yrs ago that does 90% of what a new one does (IMHO). I was
out of it for 20yrs too. Things changed a lot in the 70;s.

Joe NA3T mack@ncifcrf.gov

>3. What would the going rates be to sell the T4XB or HQ170
> and where would I sell them? Are they collectors' items?
>4. How have xmtrs & rcvrs improved in the last 25 years?
> Sensitivity, selectivity, stability, features, programmability?
>
>Note: I started when I was 9 yrs old so I am not as old as
>this msg makes me seem.
>
>Thanks,
>Joe

3585. Converting Commercial Radios for Ham Bands

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 17:22:54 UTC
From: lapin@casbah.acns.nwu.edu
Message-ID: <3bfo1e$r64@news.acns.nwu.edu>
Source record: 115323

I recently came upon a working Motorola Syntor that was discarded by our local fire department when they upgraded.

How do I go about getting the necessary information (schematics, manuals) so that I can convert this very nice radio for use on the ham bands?

Greg Lapin KD9AZ
g.lapin@ieee.org

3586. Re: Where to get RF parts?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 17:43:29 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <3bfp81$m1n@usenet.rpi.edu>
Source record: 115328

Alan Cooney (acooney@netcom.com) wrote:
: I'm getting back into RF design after many years playing with
: computers, and am looking for sources of Unelco caps, Motorola
: MRF devices, tuneable caps, high voltage surface mount caps, and
: the like. The hobbyist just doesn't typically buy in the volumes
: local distributors need to support an order, so where do you all
: shop for small quantities of high quality parts?

I've been collecting things for years from hamfests and what
not. That seems to be the best, but it's not a good answer to your
question.

I would then like to pitch Down East Microwave. They carry a
decent variety of components and kits. Call 'em and talk to 'em...
and have them send you a catalog.

These addrs are from an old catalog, so I hope they are still valid.

D.E.M. (Bill Olson, w3hqt)

RR 1, Box 2310
Troy, ME 04987
tel 207-948-3741
(fax) -5157

N2CEI
(carries all DEM stuff as far as I know, and some other related components)
Steve Kostro
Box 341A, RD1
Frenchtown, NJ, 08825
HOME (908) 996-3584 "Machine, call anytime!"

Good luck, I know how hard some of this can be. Bill
and Steve are good people, and should be able to hook you up with what
you need.

-Lance, only a satisfied customer

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342

3587. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 18:30:41 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3bfs0h$jrd@hpscit.sc.hp.com>
Source record: 115324

In article <claude.786096261@bauv111>,
Claude Frantz <claude@bauv111.bauv.unibw-muenchen.de> wrote:
>kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:
>
>>Anyone know anything about using overtone crystals in crystal
>>filters?
>
>Overtone crystals are not suited for filter use, i.e. the overtone
>mode cannot be used. In fact, the fundamental mode could be used,

It is quite possible to make overtone crystal filters. There are
three differences:

1. The insertion loss will be higher because the Q will be lower
than with fundamental.

2. The maximum practical bandwidth is decreased by the square of
the overtone number. So third overtone filters can only be 1/9
as wide as the widest practical fundamental filters.

3. You need auxiliary filtering to trap fundamental and fifth
overtone leakage.

Rick N6RK
rkarlqu@scd.hp.com

3588. Conversion of Uniden CB to 10 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 19:26:03 UTC
From: karl@tyrell.net
Message-ID: <D01nBF.5wo@tyrell.net>
Source record: 115331

Subject: Conversion of Uniden CB to 10 meters
Newsgroups: rec.radio.amateur.equipment
Organization: Tyrell Corporation - 800-TYRELL-1 - POP's in 504/816/913
Summary:
Keywords:

With the kind assistance of several other hams, I have made a partial conversion of a "President Model Washington" SSB CB rig to 10 meters. The PLL fundamental crystal frequency was increased from 11.225 to 11.535 MHZ and the RIT circuit modified to allow shifting of both transmit and receive.

The radio now covers from 28.220 to 28.660 MHZ in 40 steps and can be additionally shifted +/- 3KHZ from each center frequency. In order to complete the mod, I would like to remove or replace the voltage limiting resistor that inhibits the varactor from providing a greater shift.

I have had no success in getting the proper schematic for this rig. It uses a MB8719 PLL chip and was manufactured during the early to mid 1980's. Does anyone have any idea what resistor should be bypassed or another method to achieve the shift?

All replies are appreciated... de Karl - KD5LR

3589. Re: Frequency Doubling Mixers... evaluation...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 19:39:25 UTC
From: dtiller@rmc.edu
Message-ID: <3bg01d$om1@gnd0.rmc.edu>
Source record: 115326

ka7oei@uugate.wa7slg.ampr.ORG wrote:
: Could someone tell me about the performance of a "frequency-doubling mixer"?

: These mixers are the ones consisting of back-to-back diodes, with the LO
: at 1/2 the desired LO frequency is applied to one end, and the RF and IF
: signals are extracted from the other, or something similar.

Another type I was just reading about is a varactor diode multiplier.
Basically:

RF at F0 -> Attenuator -> Varactor Diode -> Filter at n * F0 -> RF out

The cool thing is that there's no power supply involved! I can give you
the reference to the book if you want - email me if you'd like it.
--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
Don't let your SKS get | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
"Tainted with Defilement!" | Ashland, Va 23005 | 77d 31' 32.19" W |

3590. Re: Overtone crystal oscillator

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 19:59:32 UTC
From: alanb@sr.hp.com
Message-ID: <3bg174$ga8@canyon.sr.hp.com>
Source record: 115325

Alan Bloom (alanb@sr.hp.com) wrote:

: A crystal cannot oscillate near its second harmonic. There is no such
: thing as a "second overtone" crystal, so there is no need to worry about
: 32 MHz. The 200 nH choke would make the 100 pF capacitor look like
: a 45 pF capacitor at 48 MHz. A somewhat larger choke would be
: appropriate. Say, around 390 nH.

: Actually, 50 and 100 pF seem kind of large for a 48 MHz overtone crystal.
: Check what the proper load capacitance is for the crystal you are using,
: and choose C1 and C2 so the series combination (C1*C2/(C1+C2) is that
: value, or a little less, while maintaining C1/C2's 2:1 ratio.

I should have added that if you do that, you should make the choke bigger
also. Make it resonante with the capacitor around 25-30 MHz or so.
(Above 16 MHz, but below 48 MHz.)

AL N1AL

3591. QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-29 22:39:34 UTC
From: danbl@hprnd.rose.hp.com
Message-ID: <3bgaj6$5io@hpchase.rose.hp.com>
Source record: 115329

Would someone kindly post the proceedure
to subscribe to the QRP newsgroup.

Thank you,
Daniel Blakley KB6MHN

3592. Poor mans logic analyzer using parallel port

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 01:28:40 UTC
From: hadleyv@et.byu.edu
Message-ID: <3bgkg8$dei@bones.et.byu.edu>
Source record: 115330

Has anyone seen any shareware software out there for a logic analyzer for an IBM clone parallel port. I want to capture to a file some slow TTL logic signals of say 4800-9600 baud simulataneously with a number of samples per bit using the 4 input lines of the
parallel port. Even better would be some software that can not only do that but display them later in a timing chart (side by side) on the screen in a virtual screen mode so to speak (scrolling left to right as time increases or decreases) (maybe also with a slow playback and zoom?...do I ask too much) The signals I want to cature will occur over an extended length of time, say a couple of minutes so I want to be able to use my harddrive as virtual memory. Any help would be appreciated. Thanks.

--
Vince Hadley |
KA7GVQ |
hadleyv@bones.et.byu.edu |

3593. Fibre Audio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 01:56:25 UTC
From: bills@inqmind.bison.mb.ca
Message-ID: <q9ykwc2w165w@inqmind.bison.mb.ca>
Source record: 115357

At our monthly repeater club meeting last night, the idea was
suggested that if we kept our rather fussy link controller
down on the ground, and left the radios 800 feet up the tower,
we'd find it easier to update the controller when needed. THis
involves running 6 audio channels plus PTT and COS for the 6
UHF/VHF radios up the leg of a commercial tower, through an
RF field in the hundreds of kilowatts. Is there any hardware
to do this with fibre optics ? Is it remotely feasible at
amateur cost levels ? Supposing we could scam onto 800+ feet
of multielement fibre cable and get permission from the
broadcaster to string it up the tower leg to the 800 foot level.
Its getting very difficult to get access to this tower more
than once a year; I'm amazed that the equipment we have works
as well as it does.

Apparently commercial broadcasters use fibre for audio and
video all the time.
Bill

bills@inqmind.bison.mb.ca-
The Inquiring Mind BBS, Winnipeg, Manitoba 204 668-8845

3594. REQ: Mods for Standard C168A

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 06:34:03 UTC
From: bvogt@kaiwan.kaiwan.com
Message-ID: <3bh6cr$ob@kaiwan009.kaiwan.com>
Source record: 115332

I've been looking everywhere for a mod sheet to the Standard C168A 2m HT,
but with no luck. If anyone knows of where I can find such a thing, or
email me the mod, I'd certainly appreciate it!

73s

Brooks
bvogt@kaiwan.com

3595. ### LOOKING FOR PART : TCM3105 IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 11:16:09 UTC
From: s2202629@np.ac.sg
Message-ID: <3bhmtp$6e1@nova.np.ac.sg>
Source record: 115333
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

I'm trying to put together a simple packet modem for VHF use, and I seem to have problem locating this IC locally:

TCM3105

It's a 'single chip FSK modem' and is manufacturered by Texas Instruments. It comes in a 16 pin DIL package if I'm not mistaken (TCM3105N)

Can someone let me know where I can find this part number, and how much should I expect to pay for it if I'm getting it in small quanitites (Perhaps 2-3 pieces?) ^^^

Thanks!

3596. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:12:34 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <D02xwy.IvD@hpqmoea.sqf.hp.com>
Source record: 115334

Bill Kirkland (kirkland@bgtys22.bnr.ca) wrote:
: Anyone know anything about using overtone crystals in crystal
: filters?

You don't give any details about what sort you're interested in, so a matching reply would be "Yes".

More seriously:

I guess you're interested in filters for superhets with high IFs. Fundamentals have been made to the 200MHz, but these are lab curiosities. Quite a number of filters in the 40 MHz upward region are built around overtone crystals. The models of the overtone resonances are similar to the fundamental models, but you have to remember the different equivalent network values. Don't forget the different spurious resonances. Quartz manufacturers usually design crystals especially for filters with spurii kept as far as possible from the wanted mode.

Traditional lattice designs and ladder structures are possible.

With the very best mixers, we now find that crystal filters are the limiting factor in HF receiver dynamic range. As a general rule, larger lumps of quartz are better, no doubt due to peak energy density. Higher freq filters normally mean smaller crystals, so worse intermod. Overtone devices mean larger masses, and so could be helpful. I've found that ladder structures seem better too.

This is an area you can have a lot of fun in, provided you have access to gear for plotting responses and measuring intercept points. You also need good supplies of suitable crystals and knowledge of their performance/characteristics/spreads.

Cheers
David GM4ZNX

3597. Re: Where to get RF p 1/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.266.546@acenet.com>
Source record: 115338

GLH>: I'm getting back into RF design after many years playing with
GLH>: computers, and am looking for sources of Unelco caps, Motorola
GLH>: MRF devices, tuneable caps, high voltage surface mount caps, and

Alan, try these:

This list of Parts, kits and radio/electronics dealers was
prepared in October 1994 by Gene K7EEK with the help of Brian, AF4K

A & A Engineering 714-952-2114
2521 W. La Palma # K
Anaheim, CA 92801 Battery charger kits etc.

A.B.C Electronics 800-562-6503 206-364-8300
1750 15th N.E. Ham Radio New and Used
Seattle Wa 98155 Towers, Antenna's etc.

Accord Electronic Systems.800-998-2242: 305-968-1026:FAX305-968-1027
2946 N.W. 60th St. Good selection of solid-state devices, IC Sockets,
Fort Lauderdale, FL. 33309: DB Connectors, Floppy Drives and PC parts.

Active Electronics 206-881-8191: FAX 206-883-6820
13107 Northup Way 20th St. N.E. Electronic Parts.
Bellevue, Wa.98205 Good selection of Pre-Pkg. Solid-state devices.

Active Electronics National. 800-677-8899: Call for nearest Branch.
11 Cummings Park: 617-932-4616: FAX 617-933-8884: Electronic parts
Woburn, MA 01801 Good selection of Pre-Pkg. Solid-state devices.

ADI Co. 800-233-6261
180 Michael Drive Power supplies, batteries etc.
Syosset, NY 11791

Adkins:Charles P. N8QXP 313-382-0272
1821 La Blanc. Tubes
Lincoln Park,MI 48146

Advanced Computer Products Inc. 800-366-3227 FAX 714-558-8849
1310 E. Edinger 714-558-8813 Voice Sales
Santa Ana, CA 92705 Chips, semiconductors

Advanced Micro Devices, Inc. 800-292-9263: 408-732-2400:
P.O. Box 3453: 901 Thompson Place: Literature ordering. 512-462-6882
Sunnyvale California 94088-3453 For a dealer near you. 800-538-8450

Akai Electronics.Div of Mitsubishi 800-552-8324 or 800-553-7278
5757 Plaza Drive Both # will get a responce "Mitsubishi". Messages
Cypress, Ca. 90630-0007 will direct you. Parts, Lit. or Questions.

All Electronics 800-826-5432 (orders) FAX 818-781-2653
P.O. Box 567 Voice: 818-904-0524 INFO
Van Nuys, CA 91408 Misc. New and Surplus parts etc. Free Catalog

Allied Electronics: 800-433-5700 Located in 36 states, 83 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes. Min.Prepaid
order $25. Min. Credit Card order $50 as well as COD is $50. Min.

Alltech Electronics.Orders only 800-995-7773:Inquiries 619-721-7733
602 Garrison St. Fax 619-721-2823 Apple and IBM Computer support.
Oceanside, Ca. 92054 All kinds of Hardware. Call for flyer..

Alltronics: Main. 408-943-9773: FAX 408-943-9776
2300 Zanker Road Excellent Tube selection at reasonable prices
San Jose, CA 95131 Main Store. Components, grab bags etc. Min $15
24 hour BBS 408-943-0622 2400 Baud - N-8-1

Alltronics: Branch Store. 702-897-7237
6283 S. Industrial Ave. Components, grab bags etc.
Las Vegas Nv.89118

Alltronics: Branch Store. 801-485-5117
2888 S. Main St. Components, grab bags etc.
Salt Lake City, Ut. 84115

Almac Division of Arrow Electronics 800-426-1410
14360 S.E. Eastgate Way. Solid-state componets
Seattle, Wa. 98007

Amateur Electronic Supply (Main Store) 800-558-0411 or 414-358-0333
5710 W. Good Hope Rd. Fax 414-358-3337: Ham Radio New and Used.
Milwaukee, WI.53223: Excellent prices. Call for a quote.Free Catalog

Amateur Electronic Supply (Branch) 800-321-3594 or 216-585-7388
28940 Euclid Ave. Ham Radio New and Used.
Wickliffe, Ohio 44092 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-327-1917 or 407-894-3238
621 Commonwealth Ave. Ham Radio New and Used.
Orlando, Fla. 32803 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) No Toll Free # 813-461-4267
1898 Drew St. Ham Radio New and Used.
Clearwater, Fla. 34625 Excellent prices. Call for a quote.

Amateur Electronic Supply (Branch) 800-634-6227 or 702-647-3114
1072 N. Rancho Dr. Ham Radio New and Used.
Las Vegas, Nev. 89106 Excellent prices. Call for a quote.

Amateur Radio Supply 800-457-2277 or 206-767-3222
5963 Corson Ave.So.#140 24hr. Fax 206-763-8176
Seattle, Wa. 98108 Ham Radio New and Used. Good selection.

Amazing Concepts Fax 603 672 5406
P.O. Box 716
Amherst, Nh 03031

American Science and Surplus (formerly JerryCo) The Surplus Place.
P.O. Box 48838 708-475-8440: FAX 708-864-1589
Niles IL 60714-0838 Lots and lots of surplus. WWII gun cameras,
velcro, laser disk chassis, 6 volt VW wipers motors, LEDs, rubber
brains, you name it, they've had it. Catalogs are a really good.
$12.50 minimum order, (which includes the $4 shipping charge).

Amidon Associates 213-763-5770
12033 Otsego Street
North Hollywood, CA 91607 (toroid cores, ferrite beads etc.)

Antenna Bank, The. Alexandria VA. East Cust. only. 800-336-8473

Antennas West 800-926-7373: 801-373-8425
Box 50062S Wide variety of antenna kits, loops etc.
Provo, UT 84605

Antique Audio 512-467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits

Antique Electronic Supply Co. 602-820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified 508-371-0512 Write for free sample.
P.O. Box 802 Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Appleseed Electronics Inc. 219-489-9802
P.O. Box 8228
Fort Wayne, IN 46898 Parts
>>> Continued to next message

3598. Re: Where to get RF p 2/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.267.546@acenet.com>
Source record: 115339

>>> Continued from previous message
ARE Communications Ltd. 44-081-997-4476
6 Royal Parade
Hanger Lane, Ealing HF kit for ICOM R-7100 to 200 kHz !
London W5A 1ET & SSB kits for Icom R-100 and R1.

ARRL: Free Getting Started in Ham Radio Info 800-326-3942
225 Main Stret: 203-666-1541: Fax 203-665-7531: QRP Books, QST Mag.
Newington, CT 06111. ARRL BBS 203-666-0578. Compuserve 70007,3373

Arrow Electronics Inc. 800-932-7769: Note, No more Catalog
1860 Smithtown Avenue Minimum $25.00 per Item Line ordered.
Ronkonkoma, NY 11779. Components distributor to the Industry.

A.R.S. 602-820-5411
Arizona Need address Tubes

Austin ARS 800-423-2604: 512-454-2994
5325 North I-35 Ham Radio New and Used
Austin, Texas. 78723 Yaesu, Alinco and Cushcraft Ant.

Azden Communications Div.:Orders only 800-643-7655: Fax516-328-7506.
147 New Hyde Park Rd. Other inquiries 516-328-7501 Parts and service.
Franklin Sq. NY.11010 New FM Tranceivers for 10-6-2-220-440 bands.

Bauman:Jeff, WB5KZW. 313-435-9922: 313-661-0202 Jeff had 1500 Tubes
6647 Stonebridge East, for sale as of December,1993
West Bloomfield, MI 48322

BCD Electro 214-343-1770
P.O. Box 830119
Richardson, TX 75083 Catalog, parts, etc.

Bigelow Electronics No number listed
P.O. Box 125
Bluffton, OH 45817 Parts, Catalog $2. Flyer 1 stamp

Brigar Electronics 607-723-3111 or FAX 607-723-5202: Free flyer with
7-9 Alice St lots of bargains with quantity pricing.$25 min.
Binghampton, NY. 13904 Electrolytics, Connectors, Solid-State. etc.
We buy excess Electronic inventory.

Cable:John, 619-258-7931
Address needed Tubes from 1941 to 1960, new.

Cable Experts (Orders only) 800-828-3340: Tech info 708-506-1886
113 McHenry Rd. FAX 708-506-1970. Coax, Connectors, Rotor Cable,
Buffalo Grove, IL. 689-1797. Ant.Wire & Baluns.SASE for literature.

C-COMM A.S: Dale Osterud 800-426-6528 206-784-7337: FAX 206-784-0541
6115 15th N.W. AEA, Alinco, Icom, Kantronics, Kenwood and Yaesu
Seattle Wa. 98107 Ham Radio New and Used Call for a quote.

CeCo Communications. 800-221-0860: 212-646-6300
2115 Avenue X Vacuum tubes
Brooklyn, NY 11235

Circuit Board Specialists June 1993 Mailed returned,
P.O. Box 969 no forwarding address
Pueblo, CO 81002 (Various kits & projects, P.C. boards)

Circuit Specialists Inc. 800-528-1417
Box 3047 Electronic components incl. RF parts
Scottsdale, AZ 85271

Circuitwerkes Co. 904-331-5999: FAX 904-331-6999
No address Circuit Boards I believe. Not aware who this is.???

C & N Electronics 800-421-9397: 612-429-9397
6104 Egg Lake Road FAX 612-429-0292
Hugo, MN 55038 Buy & sell tubes

C.O.M.B Now called Daymark, 800-328-0609
Minneapolis MN Update to follow on receipt of new Catalog.

Comm Center, The ??? Laurel MD No longer Listed

Communications Center ??? Lincoln NE No longer Listed

Communication Concepts Inc. 513-426-8600
508 Millstone Drive HF linear amp kits etc.
Xenia, OH 45385

Communications Specialist 800-584-0547:714-998-3021: FAX 714-974-3420
426 West Taft Ave. Automatic Morse Station Identifier.
Orange, CA. 926655-4296 CTCSS Tone Encoders/Decoders

Consolidated Electronics 800-543-3568 Dayton OH. DTMF decoders etc.

CQ RADIO KITS 416-775-9119
Box 1546 QRP xcvrs, rcvrs, keys etc.
Bradford, ONTARIO Canada L3Z 2B8

Crystek Crystals 800-237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

C & S Electronics 203-866-3208
P.O. Box 2142
Norwalk, CT 06852-2142 Specialty RF chips etc.

Curtis Electro Devices 415-964-3846
Box 4090
Mountain View, CA 94040 Keyer chips etc.

Cushcraft Corp. 603-627-7877: FAX 603-627-1764: Telex 4949472
P.O. Box 4680: 48 Perimeter Rd.
Manchester, Nh 03108

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

CW Electronic Sales Denver CO No longer Listed

CW Forever Key Co. Send stamp for list.
P.O. Box 659
Manchester, MO 63011 Buy & sell keys etc.

Cy-ance Kit, 501-839-8293
14786 Slate Gap Road
West Fork, AR 72774 80 different kits

Daily Electronics 800-346-6667: 206-896-8856: FAX 206-896-5476
10914 N.E. 39th Street
Vancouver, WA 98682 Tubes, all types.

Dallas Solar Power 800-345-4913
P.O. Box 611927
San Jose, CA 95161 Photovoltaics, Solar cells, chargers

Data Display Products 800-421-6815
Inglewood CA LED manufacturers, deal in volume sales to Industry.

Davilyn Corp. 800-235-6222 xct.CA: 818-787-3334 CA: FAX 818-787-4732
13406 Saticoy St. Electronic Tubes. Good Prices, Call for Catalog
North Hollywood, CA 91605-3475 Also Surplus Electronic Gear.

DC Electronics 800-423-0070: 602-945-7736
P.O. Box 3203 FAX 602-994-1707
Scottsdale, AZ 85271 Components. Many ICs.

Debco Electronics. Orders 800-423-4499: Info 513-531-4499: No Min.
425 Edwards Rd. FAX 513-531-4455 Millions of Chips, Transistors,
Cincinnati, OH. 45209: and Electronic Components. Excellent Prices.
>>> Continued to next message

 SLMR 2.1a Gullible isn't in the dictionary. Really, go ahead, look!

3599. Re: Where to get RF p 3/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.268.546@acenet.com>
Source record: 115340

>>> Continued from previous message
Delaware Amateur Supply 800-441-7008: 302-328-7728
71 Meadow Road Ham Radio New and Used AEA,Alinco,Cushcraft,
New Castle, DE. 19720 Icom,Kenwood,Mosley,Tentec,Yaesu and more.

Derrick Electronics Broken Arrow OK No Longer Listed

DH Distributors 316-684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Ditek Industries -=[NEED ADDRESS]=- 800 762-9328

Drake, R.L. 800-543-5612 and for catalogs 800-937-2534
P.O.Box 3006 513-866-2421 Communications products
Miamisburg, OH. 45342 Call for specification sheets.

DWM Enterprises (No number listed)
1709 N. West Avenue #103
Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

Duracell Battery technical support line at 800-544-5454 ext. 3281.

EGE Inc. National 800-336-4799 orders and quotes. or nearest store.

EGE Inc. 800-572-4201: 703-643-1063: Service 703-494-8750
14803 Build America Drive. Bldg.B. Alinco, Icom, Kenwood, Ten-Tec
Woodbridge, VA. 22191. and Yaesu. Towers and Packet acc.

EGE Inc. New England area except NH. 800-237-0047

EGE Inc. 800-336-4799: Service and Info 603-898-3750
8 Stiles Rd.
Salem, NH. 03079

E.H.Yost 608-643-3194: FAX 608-643-4439
7344 Tetiva Rd. Ni Cad Batteries and Packs
Sauk City, Wi. 53583

Electrogadgets Inc. Need Phone Number.
P.O. Box 2065
Morris Township, NJ 07962 Digital voice recorder kits $20.00

Electron Tube Enterprises 802-879-0611
Box 311
Essex, VT 05451 Tubes

Electronic Bits 'N Pieces 303-361-6530
P.O. Box 31654

Aurora, CO 80041 Tubes, transistors, diodes, chips

Electronic Equipment Bank Vienna VA 800-368-3270

Electronics Exchange 314-426-3056
No address given
St. Louis, MO Electronics suurplus. Call for catalog.

Electronic Goldmine 602-451-7454 Fax 602-451-9495
P.O. Box 5408 (again the name says it all!)
Scottsdale, AZ 85261

Electronic Rainbow 800-428-3500 317-291-7262
6254 LaPas Trail
Indianapolis, IN 46268 Various kits

Elktronics Northeast Co. 603-525-4001
Rt. 1 Box 789
Hancock, NH 03449 VFO kit, RF amp, filters etc.

Emerson Radio Corp. 800-695-0095: Fax 812-386-6502
6 Engine Road National Parts Distribution.
Parsippany, NJ. 07054-0432

Erickson Communications Chicago IL 800-621-5802

Fair Radio Sales. 419-227-6573:419-223-2196: FAX 419-227-1313
1016 E. Eureka Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send S.A.S.E.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

Falkner Enterprises of America Inc.
312 River Street 319-687-2479
Sabula, IA 52070 Batteries, electronic parts, catalog

FAR Circuits (N9ATW) (No number listed)
18 N 640 Field Court
Dundee, IL 60118 (P.C. boards etc.)

Fordham Radio SUpply 800-695-4848
260 Motor Parkway
Hauppauge, NY 11788 Tools and test equipment

Fuller,R.M. Co. 800-626-6662
902 Industry Drive
Seattle, WA 98188 DTMF decoder chips & info.

Gateway Electronics 800-669-5810 Orders
8123 Page Blvd. 314-427-6116
St. Louis, MO 63130 Parts, gadgets $10 min.

G.I.S.M.O Rock Hill SC 800-845-6183

GTE Microcircuits Tempe AZ 800-828-7280

G4ZPY Paddle Keys no number listed
c/o Charles Tryor, N4LMY
7809, 10th Avenue S.
Birmingham, AL 35206 Various keys

Ham Key Co.The: Division of Ham Radio Center Inc. 800-527-0807
8342 Olive Boulevard
St. Louis, MO 63132 (Paddles, keyers, SWR meters etc.)

Ham Radio Outlet, West Coast Branches and Western Canada 800-854-6046

Ham Radio Outlet 800-854-6046 503-598-0555
11705 S.W. Pacific Hwy. New and Used Ham Supplies
Portland, Or. 97223

Ham Radio Outlet 800-854-6046 415-342-5757
999 Howard Ave. New and Used Ham Supplies
Burlingame, Ca. 94010

Ham Radio Outlet 800-854-6046 415-534-5757
2210 Livingston St. New and Used Ham Supplies
Oakland, Ca. 94606

Ham Radio Outlet 800-854-6046 408-736-9496
510 Lawrence Express Way #102. New and Used Ham Supplies
Sunnyvale Ca. 94086

Ham Radio Outlet 800-854-6046 714-533-7373
933 N Euclid St. New and Used Ham Supplies
Anaheim, Ca. 92801

Ham Radio Outlet 800-854-6046 818-988-2212
6265 Sepulveda Blvd. New and Used Ham Supplies
Van Nuy's, Ca. 91411

Ham Radio Outlet 800-854-6046 619-560-4900
5375 Kearmy Villa Rd. New and Used Ham Supplies
San Diego, Ca. 92123
>>> Continued to next message

• SLMR 2.1a • Gullible isn't in the dictionary. Really, go ahead, look!

3600. Re: Where to get RF p 4/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.269.546@acenet.com>
Source record: 115341

>>> Continued from previous message
Ham Radio Outlet, Mountain 800-444-9476

Ham Radio Outlet 800-444-9476 303-745-7373
8400 E. Llif Ave. #9. New and Used Ham Supplies
Denver,, Co. 80231

Ham Radio Outlet 800-444-9476 602-242-3515
1702 W. Camelback Rd. New and Used Ham Supplies
Phoenix, Az. 85015

Ham Radio Outlet, New England and Eastern Canada. 800-444-0047

Ham Radio Outlet 800-444-0047 603-898-3750
224 N. Broadway New and Used Ham Supplies
Salem Nh. 03079

Ham Radio Outlet, Mid Atlantic. 800-444-4799

Ham Radio Outlet 800-444-4799 703-643-1063
14803 Build America Dr. New and Used Ham Supplies
Woodbridge, Va. 22191

Ham Radio Outlet, Southeast, 800-444-7927

Ham Radio Outlet 800-444-7927 404-263-0700
6071 Bulford Hwy. New and Used Ham Supplies
Atlanta, Ga. 30340

Ham Station,The 800-729-4373: 812-422-0231: FAX 812-422-4253
P.O. Box 6522: 220 N. Fulton Ave. Service info 812-422-0252
Evansville, IN. 47719-0522 Warranty service Icom,Kenwood and Yaesu

Hamtronics, Inc. 716-392-9430: FAX 716-392-9420 Data modems
65-D Moul Road Repeater kits, Rpt-controller kits, Preamps and
Hilton, NY 14468-9535 Rcv. converter kits and Tone decoder/encoder
FM Transmitters and Receivers. Choice of a kit or factory wired unit.

Harmon Kardon Inc. 800-645-7484 516-496-3400
240 Crossways Park West Audio Equip,ent Mfg.
Woodbury, NY. 11797 National Parts Distribution.

Heathkit Educational Systems 800-253-0570: FAX 616-925-4876
P.O. Box 1288 Electronic and Computer Education
Benton Harbor MI. 49023 Kits or wired units. Free Catalog

Heathkit Of old. ;-(note the tear in the eye. 800-253-0570
Old Heathkit replacement parts until depleted plus schematics and

manual copies for some of the old Heathkits. Call with model # and or
part number. They may still have it.

Henry Radio. Orders 800-877-7979:Info 213-820-1234:FAX 310-826-7790
2050 S Bundy Dr. International & non Tch Tone 310-820-4556
Los Angelas, CA. 90025. Ham Radio New and Used. Accesories, Ant.,
Towers plus manufactures and sells Linear Amplifiers.

Hosfelt Electronics 800-524-6464: FAX 614-264-5414
2700 Sunset Blvd. No minimum, $3.75 S&H. Surplus electronics.
Steubenville OH 43952

Howes,C.M. Communications Phone: 44 327 60178
Eydon, Daventry,
Northants NN11 6PT. England
QRP, transmitters, receivers, misc. "The Heathkit of England",
though with assembly manuals not as detailed, also without the
intricate mechanicals of Heathkits. [Carried by Townsend Electronics
(at least) in the US] Townsend Electronics is listed here.

H & R Company. Herbach and Rademan. 800-848-8001: 215-788-5583
P.O.Box 122: 18 Canal Street: FAX 215-788-9577
Bristol PA 19007-0122 Tools, parts etc. Min. $25. Free catalog

HSC Electronic Supply. Halted Specialties Co. 800-442-5833 except CA.
3500 Ryder Street in CA. and outside US 408-732-1573
Santa Clara, CA 95051 Surplus (new) electronics;New & used test
equipment. Minimum order $10 ($2 handling charge under $20), plus UPS
shipping cost. Has three stores, of which 3500 Ryder Street is one.

Icom America Inc.206-454-8155:FAX 206-454-1509:Free Cat.206-450-6088
2380 116TH Ave Ne TELEX 152210 Icom Amer Bellevue
Bellevue, Wa 98004 National Parts, Service and Info.

Idiom Press (No phone given)
Box 583 Computer controlled keyer kit
Deerfield, IL 60015

International Components Corp.800-325-0101: FAX 503-336-4400
1803 NW Lincoln Way Cabinets, components & vacuum tubes
Toledo, OR 97391

International Crystal Mfg Co. 405-236-3741
10 North Lee Street Crystals!
Oklahoma City, OK 73102 Not sure which address??

ICM (International Crystal Manufacturing Co., Inc.) 800-426-9825
P.O. Box 26330: 701 W. Sheridan
Oklahoma City OK 73126-0330

J & S Radio Sales 203-456-2667
Address Needed! G.E. & Motorola surplus radios.
Anytown, CT

Jameco Electronics 800-831-4242: 415-592-8097: FAX 800-237-6948
1355 Shoreway Road Electronic components $30 min. order
Belmont, CA 94002

JAN Crystals 800-526-9825: 813-936-2397
P.O. Box 06017: 2341 Crystal Drive: Crystals
Ft. Myers, FL 33906-6017

Javanco Orders 800-528-2626: 615-244-4444: FAX 615-244-4446
501, 12th Avenue S. BBS: 244-4445
Nashville, TN. 37203 Surplus parts etc.

J Com. Orders only 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway. QRP HT rigs for 80 - 6m, $350.00, HamBase for PC,
Victor, NY 14564 DSP Filters, Personal Autopatch & Rig/PC Interface.
Tied in with Ramsey Electronics.

JDR Micro Devices 800-538-5000: 800-538-5001
2233 Branham Lane Computers and components
San Jose, CA 95124

Johnson Shop Products 408-257-8614: FAX 408-253-6288
P.O. Box 160113 Catalog $1 or two stamps
Cupertino, CA 95016 New & some used electronic parts

Jolida Tube Factory 800-783-2555
10820 Guilford Road Vacuum tubes
Annapolis Junction, MD 20701

Jones & Assoc, Marlin P. 407-848-8236: FAX 407-844-8764
P.O. Box 12685 No minimum ($1 fee for under $10)
Lake Park FL 33403-0685 Surplus electronics.

JPS Communications Inc. 800-533-3819:919-790-1011: FAX 919-790-1456
P.O. Box 97757 For tech info 919-790-1048. Digital Signal Processing
Raleigh, NC. 27624 DSP Noise Reduction Products.

Jun's Electronics. 800-648-3962: 310-390-8003: FAX 310-390-4393
5563 Sepulveda Blvd. Ham Radio New and Used. Alinco,Comet,Icom,
Culver City, CA. 90230 Kenwood and Standard.

K2AW's Silicon Alley 516-334-7024
175 Friends Lane Semiconductors, in particular
Westbury, NY. 11590 Free catalog, $10 minimum order.
>>> Continued to next message

3601. Re: Where to get RF p 5/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.270.546@acenet.com>
Source record: 115342

>>> Continued from previous message
K3IWK (No number listed)
5120 Harmony Grove Rd. Chassis & cabinet kits. S.A.S.E. please
Dover, PA 17315

KA7QJY COMPONENTS 801-563-5173 (Danny Stevig)
Box 3893 Parts
Logan, UT 84323

K8XF Import Key Co. (No number listed)
9929 Fox Squirrel Keys, paddles etc.
Newport Richey, FL 34654

Kantronics Rf Concepts 913-842-7745
1202 E. 23 St.
Lawrence, Ks 66046

KDK Distributing Madison TN 800-251-4141

Kenwood USA Corporation 800-637-0388 This # has changed, update soon.
P.O Box 22745. 2201 E. Dominguez St. Amateur Radio Equipment
Long Beach, Ca 90801-5745 National Parts and Service

Kirby No number listed
298 W. Carmel Drive Tubes, new up to 90% off
Carmel, IN 46032

Kilo-Tec 805-646-9645
P.O. Box 10 H.V. Variable capacitors
Oakview, CA 93022

Lacomb Distributors Lacomb LA No Longer Listed

Langner:John, WB2OSZ
115 Stedman St. Slow Scan Television for IBM PC.
Chelmsford, MA 01824-1823 508-256 6907

Lake Electronics (44) 0602-382509 (Alan G4DVW)
7 Middleton Close
Nuthall QRP kits, receivers, accessories etc.
Nottingham NG16 1BX England

Lectrokit No telephone [FAST response!]
401 W. Bogart Rd.
Sandusky, OH 44870 (QRP Transceiver kits, P.C. boards etc.)

Less Buster's Electronics 702-642-0325
2039 Civic Center Dr. #176N

N. Las Vegas, NV 89030 Inverters, gadgets, parts, free catalog

Long's Electronics Birmingham AL 800-633-3410

Madison A.S Yaesu only 800-231-3057 713-729-7300 713-729-8800
12310 Zvalla Street. FAX 713-729-4766 Ham Radio New and Used Tubes,
Houston, Tx. 77085 capacitors, meters, keys and accessories.

Maplin Electronics Ltd. 011-44-702-554161 / 556001 Tech
P.O. Box 3 FAX 011-44-702-553935
Rayleigh, Essex Catalog L5.50 or L10.65 air
England SS6 8LR Hobbyist supplier

Marymac 800-231-3680: 713-392-0747
22511 Katy Freeway FAX 713-574-4567
Houston, TX 77450 (Discounts on all Radio Shack parts & products)

MCM Electronics 800-543-4330 or 800-824-TECH
650 Congress Park Drive FAX 513-434-6959 Ham Gear & Acc.
Centerville, OH 45459 Minimum $20 Parts, TV/VCR parts etc.

Memphis Amateur Electronics 800-238-6168: 901-683-9125:
1465 Wells Station Rd. FAX 901-682-7199
Memphis, TN. 38108 Ham Radio New and Used

Mendelson Industrial & Electronic Surplus 800-422-3525 (I think)
340 E. First Street 513-461-3525 (firm) : FAX 513-461-3391
Dayton, OH. 45402

Mercury Systems 609-596-3304
15 Lakeside Dr. ARRL Kits ??? Does anybody know more about this?
Marlton, NJ 08053

Merz, Don No number listed
47 Hazel Drive Used Ham Gear and Surplus
Pittsburgh, PA 15228 Send large SASE for list of tubes

MFJ Enterprises For Dealers/Orders 800-647-1800/8324 for TECH help
Box 494 601-323-5869 20M QRP transceiver,keyer, transmatch etc.
Mississippi State, MS 39762 DSP Filters, Packet/Software supplies.

Mid-Com Electronics Brentwood MO 800-325-3609

Midwest Surplus Electronics 800-523-3690: 513-879-2250:
P.O. Box 607 FAX 513-879-1755 Retail store and mail-order
501 West Main Street New and overstock electronic components
Fairborn, Ohio 45324 and test equipment. Super prices!!!
Centerville, Oh 45459-4072

Miller-Stephenson Chemical Co. 312-966-2022
6348 Oakton Street Conductive spray coatings
Morton Grove, IL 60053

Mini-Circuits New # 800-654-7949: 718-934-4500: FAX 718-332-4661
P.O. Box 350166 MAR series DC to 2000 MHz amplifiers $.99 up in

Brooklyn,NY.11235-0003. quanitys of 25. Single prices a little higher.
In Europe 44-252-835094: FAX 44-252-837010: Designers kits, Free flyer

Missouri Radio Center 800-821-7323: in MO call 816-741-8118
102 N.W. Business Park Lane. Ham Radios Sales and Service. AEA,
Kansas City, MO. 64150 Alinco,Icom,Kenwood,MFJ,Santec and Yaesu.

Mitsubishi Electric, see Akai Electronics.

Modular Systems Inc. 205-880-9998
1304 Toney Dr. Smart Keyer II
Huntsville, AL 35802

Mouser Electronics. N.CA. 800-346-6873: 408-842-5522
370 Tomkins Court FAX 408-842-7375 Call for catalog
Gilroy, CA. 95020-3631. Components. A builders paradise

Mouser Electronics. West 800-346-6873: 619-449-2222
11433 Woodside Ave. FAX 619-449-6041 Call for catalog
Santee, CA. 92071-4795. Components. A builders paradise

Mouser Electronics. Central 800-346-6873: 619-449-2222
2401 Hwy 287 N. FAX 817-483-0931 Call for catalog
Mansfield, TX 76063-4827. Components. A builders paradise

Mouser Electronics. East 800-346-6873: 619-449-2222
12 Emery Ave. FAX 201-328-7120 Call for catalog
Randolph, NJ. 07869-1362. Components. A builders paradise

Murdock-Mendelsohn Anyone have the address???
Dayton, OH Surplus Electronics items.

MWK Industries 1 800-356-7714
1269 Pomona Rd. Building 112 & 113
Corona,Ca. 91720

Newark Electronics 800-281-4320: 312-784-5100
4801 N. Ravenswood Avenue: Large catalog available, 94 released soon.
Chicago, IL. 60640-9944 Components, new (not geared to hobbyists)
>>> Continued to next message

3602. Re: Where to get RF p 6/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.271.546@acenet.com>
Source record: 115343

>>> Continued from previous message
New Sensor Corp. 800-633-5477: 212-529-0466: FAX 212-529-0486
133 Fifth Avenue. Vacuum tubes galore! Call for list.Min.Order $50.
New York, NY 10003 Std. test= $0.75/Tube. Premium Match $2/Tube

Oak Hills Research 800-842-3748: 616-796-0920: FAX 616-796-6633
20879 Madison Street (20 or 40M CW QRP transceiver)
Big Rapids, MI 49307

OCC Oklahoma Comm Center.800-765-4267:405-748-3066: FAX 405-748-3077
13424 Railway Dr. Alinco Tranceivers, Icom, Yaesu.
Oklahoma City, OK. 73114 Ham Radios New and Used

Ocean State Electronics 800-866-6626:401-596-3080: FAX 401-596-3590
P.O. Box 1458 Transmitting capacitors and rotary inductors
Westerly, RI 02891 CW keys, RF parts, power supplies etc.

Orion Business International, Inc. 209-432-4155.
360 W Bedford Ave, Suite 111,
Fresno, CA. 93711.

Palomar Engineers 619-747-3343
Box 455 Toroid cores and shielding beads.
Escondido, CA. 92033

Pan-Com International (No phone listed)
Box 130
Paradise, CA 95967 Send $1 for catalog of 350 kits etc.

Parts Express 800-338-0531
340 E. First Street Parts, tools, speakers, connectors etc.
Dayton, OH 45402

P.E.M. Tubes 916-383-9107
7392 French Road Tubes, radio, TV, transmitting, CRT
Sacramento, CA 95828

Penntek Electronics 717-248-2507
14 Peace Dr. Note: The Neophyte Receiver, QST
Lewistown, PA 17044

Periphex, Inc. 800-634-8132: 203-264-3985: FAX 203-262-6943
115-1B Hurley Road Ni-Cad Batteries and Packs
Oxford, Ct. 06478

Perfect Solutions 800-726-7086: 407-790-1070: FAX 407-790-0108
12657 Coral Breeze Drive Apple II stuff some IBM stuff.
West Palm Beach, Fl. 33414 Laser 128 Replacement parts.

Phillips EC (Partsguide) Seneca NY 800-225-8326
Polar Research Thief River Falls MN 800-328-2041
Power Communications Phoenix AZ 800-426-4267
Pro Search Electronics St. Louis MO 800-325-4016

Premium Parts + Electronis Co. 800-558-9572: FAX 414-473-4727
P.O.Box 28: Route 3, Hwy 59: VCR,Camcorder,Phono drive wheels,belts,
Whitewater, WI 53190-0028. Solid state and Misc. Free Catalog

Pride Tubes 800-638-3925: 205-650-5522: FAX 205-880-8077
8200 South Memorial Parkway 100% RF Tested Tubes
Huntsville, AL. 35802 Competitive prices.

Quality Computers 800-777-3642:810-774-7200: Fax 810-774-2698
P.O. Box 349 C-Itoh/Imagewriter replacement parts.
202000 Nine Mile Rd. Full Apple Support and IBM. Big Catalog, Free.
St. Clair Shores, Mi. 48080-0349 Educational support.

Quick Brown Fox New York NY 800-547-5995

RA Enterprises 408-986-8286 FAX 408-986-1009
2260 De La Cruz Blvd.
Santa Clara, CA 95050 Parts, mil. surplus,

R&D Electronics: Orders800-642-1123:Info 216-621-1121:FAX 216-621-8628
1224 Prospect Ave. Surplus electronics. $10 minimum.
Cleveland OH 44115 (Tues - Fri 9am-4pm Sat. 9am-3pm EST)

Radiokit 603-635-2235 FAX 603-635-2943
P.O. Box 973: 169 Jeremy Hill Road.
Pelham, NH. 03076 RF Components, Variable Caps, Coils $1 Catalog

Radio Works,The: 804-484-0140: FAX 804-483-1873
P.O. Box 6159 Baluns, Low cost Co-axial Cable,
Portsmouth, VA. 23703 RF Line Isolators.

Radio World Oriskany NY 800-448-9338

Ramsey Electronics 800-828-6286
Penfield NY Kits (Note I will verify this one for an update.)

Ramsey Electronics 800-446-2295: 716-924-4560: FAX 716-924-4555
793 Canning Parkway
Victor, NY 14564 (RCVR & QRP transmitter, keyer kits etc.)

Rauchwerger, Lawrence 217-352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

RC Electronics 503-862-2641
P.O. Box 367
Murphy, OR 97533 Rare parts etc. 2 stamps for catalog

Reno Radio A.S. 800-345-5686: 702-331-7373
12 Glen Carran Circle RF Concepts, Icom, Kenwood and Yaesu.
Sparks, NV. 89431 Antennas, Ham Radio New and Used

R.F. Electronics Anaheim CA No Longer Listed

R.F Parts. To Order 800-737-2787:619-744-0700 or 0750 for Tech info
1320 Grand Avenue FAX 619-744-1943
San Marcos, CA 92069 Diamond Antennas, RF Power Transistors & Tubes.

R & R Associates 213-474-1315 (res) Richard Rathburn, KB6NQ "I mainly
3106 Glendon Ave. sell PC brds from QST, Radio Electronics, etc. and
Los Angeles, CA 90034 a few of in-house design. I also sell IC's etc.
Send a SASE every now and then for his most recent flyer
and also have boards for some Motorola Application Notes.

Ryan Communications 412-368-3859
BOX 111E Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

Sansui National Parts and Service 800-421-1500

Sharp National Parts and Service 800-526-0264

Shure Brothers 800-323-6556
Evanston, IL. Microphones and Equipment

"624 Kits" No phone listed
171 Springlake Drive (QRP kits & accessories)
Spartanburg, SC 29302

Skycraft Parts and Surplus Inc. 407-628-5634 FAX 407-647-4831
P.O. Box 536186 Surplus parts etc.
Orlando, FL 32853-6186

Small Parts, Inc. 305-557-8222 Order department
13980 NW 58th Court 305-557-7955 Customer Service (ask for Mirta)
P.O. Box 4650 305-557-8004 Custom-made Parts (ask for Ziggy)
Miami Lakes, FL 33014-0650. 800-423-9009 Toll free FAX line
305-558-1255 Catalog (ask for Elizabeth)
305-557-8005 Non-standard Sizes of catalog parts (ask for Eric)
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets,
tools, wire-size drill bits (as in #61 size for PC board holes).
>>> Continued to next message

• SLMR 2.1a • Gullible isn't in the dictionary. Really, go ahead, look!

3603. Re: Where to get RF p 7/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 12:40:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.272.546@acenet.com>
Source record: 115344

>>> Continued from previous message
Smith: Dick, Electronics c/o American Electronics. 8GG9\?R-1373
P.O. Box 301: 164 Southpark Blvd.
Greenwood, IN 46142 Kits, parts. Free bulletin

Sony National Information. Call for your area dealers. 800-222-7669
Sony Parts Seattle Wa 206-763-8853
Sony National Parts 800-488-7669
Sony National Info and or problems of Warranty. 800-282-2848

Southpaw Electronics 800-851-8870: 516-352-7070: FAX 516-775-5091
P.O. Box 886 Parts, min $25. Free catalog
New Hyde Park, NY 11040-0311

S & S Engineering 301-416-0661
14102 Brown Road FAX 301-416-0963
Smithsburg, MD 21783 ($270 CW transceiver kit)

Standard Amateur Radio Products, Inc. 312-763-0081 (Voice)
P.O Box 48480 312-763-3377 (Fax)
Niles, Il 60714. Mfg of VHF-UHF Amateur Radio Equipment and acc.

Steinmetz Electronics 219-931-9316
7519 Maplewood Avenue Tubes
Hammond, IN 46324

Sun Remarketing 800-821-3221: 801-755-3360
P.O. Box 4059 AppleII series, Lisa, Macintosh service
Logan, UT 84321-4059 and related accessories plus refurbishing.

Sunset Electronics (No number listed)
12145 Alta Carmel Ct. Suite #250-139
San Diego, CA 92128 ("Build your own ham radio")

Surplus Center 800-488-3407
1015 West "O" Street (the name says it all a must have catalog!)
P.O. Box 82209 (cheapprices)
Lincoln, NE 68501-2209

Surplus Sales of Nebraska 402-346-4750 FAX 402-346-2939
1502 Jones Street
Omaha, NE 68102 $3.00 catalog (with $3 coupon)

Symphonic National Parts and Service 800-242-7158

Tannenbaum,A.G. 516-887-0057 FAX 516-599-6523
P.O. Box 110
E. Rockaway, NY 11518 Parts, High voltage capacitors, free catalog

Tejas RF Technology. 713-879-9300: FAX 713-879-9494
P.O.Box 720331 Mini Keyer, AF Filter Tejas Backpacker-II QRP kit
Houston TX 77272-0331 Many other Kits and things.

Ten-Tec 800-833-7373: 615-453-7172: FAX 428-4483: New Kit Catalog
1185 Dolly Parton Parkway. Repair Dept. 615-428-0364 ^^^ ^^^ ^^^^^^^
Sevierville, TN. 37862 Tranceivers, QRP gear and Kits. Call

Texas Tower A.S. 800-272-3467: 214-422-7306: FAX 214-881-0776
1108 Summit Ave. Suite #4 Yaesu Dealer. Ham Radio New and Used
Plano,TX. 75074 Excellent Yaesu buys. Call for a quote.

Tiare Publications 414-248-4845
P.O. Box 493W
Lake Geneva, WI 53147 (Books on QRP etc.)

Townsend Electronics Inc. 219-594-3661
Box 415 S Howes HF Kits from England
Pierceton, IN 46562 See "Howes,C.M." listing above.

Tucker Surplus Sales 800-527-4642 ext. 135: 214-340-0631
1717 Reserve St. Surplus radio & test equipment
Garland TX 75042 New Amateur Radios, Ant & Accessories

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Unity Electronics No number listed
P.O. Box 213 Vacuum tubes
Elizabeth, NJ 07206

UPI Communications Systems Saddlebrook NJ 800-526-527?

VAP Products Mentor Oh 800-321-9668

Vibroplex Co. Inc. 800-262-8387
98 Elm Street
Portland, ME 04101 (Keys, bugs etc.)

W1FB No phone #
Box 250 QRP CW transmitter kits
Luther, MI 49656

Yaesu USA 800-255-9237: 310-404-2700 Communication Products.
17210 Edwards Rd. National Parts and Service
Cerritos, Ca 90701 plus Specification Sheets.

AM International publishes a column in ELECTRIC RADIO magazine, which is
probably the best source for articles on vintage amateur radio and AM.
A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

The Northern California QRP Club will do another run of the
classic
NorCal-40, after the first of the year. Details will be announced in
the Dec. issue of QRPp, our 72 page, 100% QRP, quarterly.

The rigs are slightly under $100.
The Sierra kits are being shipped now.
If you want information on the kits or joining our super active QRP group, send me a packet or card or telephone.
WA6GER @ KM6PX.#NOCAL.CA.USA or 3241 Eastwood Rd., Sacramento, Ca., 95821, or (916) 487-3580. Do not send any money yet! Write for info.

PLEASE SEND ADDITIONS and/or CORRECTIONS to:
Brian Carling AF4K @ W3INK or to 1:109/418

 SLMR 2.1a Gullible isn't in the dictionary. Really, go ahead, look!

3604. RE: SKILL CONTEST....

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 14:04:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <01HK30HTFVMQ008ST5@uthscsa.edu>
Source record: 115335

Some nutball wrote:

> ******** WIN *********
> LUXURY 4BR PENTHOUSE
> MARINA DEL REY, CA. USA
> VALUED AT $725,000
>
> Steps to beach-near LAX Located within exclusive Los Angeles, CA.
> Marina Peninsula. area Home to movie, TV, and sports celebrities.
> 3350 sq. ft. + 1200' private sun deck, 3 fireplaces,
> 4 and 1/2 baths library/den, bar and game room.
> Winner is determined by simple contest of skill.
> Limited to 4000 entries. $250 entrance fee.
>
> For application & details send Internet EMail to CONTEST@DATANET.COM
>
>
> DNIS - Palm Springs, California * Via Modem Call: (619) 864-1468
> A Winner Of The 1993 John C. Dvorak Telecommunications Award!!
>

Yeah Right... and it probably prohibits antennas.......

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

Liberals measure compassion by how many people they are helping.
Conservatives measure compassion by how many people no longer need
their help.
--Jack Kemp

| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
****

3605. RE: Anyone Know of...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 14:05:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <01HK30HWFKXY008ST5@uthscsa.edu>
Source record: 115336

sdarragh@cisco.com.3 (Scott Darragh) writes:

>Plans or a kit for a 10m SSB QRP rig? If so drop me an email or phone me
>at the below #.
>
>Scott
>

I know that Ramsey Kits makes many QRP CW rig kits, maybe they make
a SSB one too.

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

Liberals measure compassion by how many people they are helping.
Conservatives measure compassion by how many people no longer need
their help.
--Jack Kemp

| I am Voltohm of Borg!
| Resistance is E/I!
| Power is EI!
****

3606. Re: Poor mans logic analyzer using parallel port

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 15:39:17 UTC
From: abergsma@doe.carleton.ca
Message-ID: <D037HH.7pp@cunews.carleton.ca>
Source record: 115337

try one from :

LOGIXELL Electronics
M11-2881 Richmond Rd
Ottawa, ON,
CANADA
K2B 8J5

(613) 828 4159 ph.
828 8954 fax

It's called 'The Real Logic Analyzer'

've never tried it but have seen an ad for5 it...

No guarantees, just a place to look

aj

3607. Re: ### LOOKING FOR PART : TCM3105 IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 17:06:25 UTC
From: djwang@nmrsg.biophys.upenn.edu
Message-ID: <3bibeh$k2f@netnews.upenn.edu>
Source record: 115345
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

Saw it in Active Electronics, I think it is $12 a piece, they do mail order but I don't know whether they take foreign order or not. I also
remember someone mentioned on the Net a while ago that either Jameco or JDR have them too, for about $6 a piece.
Hope this helps. 73's D.J.

3608. Need Help

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 18:07:02 UTC
From: wroach@netcom.com
Message-ID: <wroachD03EBr.Eq6@netcom.com>
Source record: 115346

I while back I posted a note about a Toshiba Chip I needed specs on. I got a response from someone reagrading how to get in contact with Toshiba. So if that someone is you, please e-mial me asap. thanks.

William

3609. Plans for HF/VHF/UHF Transverters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 18:41:16 UTC
From: o10022@a81.corp.mot.com
Message-ID: <1994Nov30.184116.2626@schbbs.mot.com>
Source record: 115347

Can anyone suggest a source for transverter schematics, particularly HF<->VHF? Replies by email would be best, unless you feel others are interested.

Any leads/help will be appreciated. Thanks.

Tony

3610. Part supplier for sm caps and inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 22:14:32 UTC
From: richard@smoky.smoky.sps.mot.com
Message-ID: <RICHARD.94Nov30161432@smoky.smoky.sps.mot.com>
Source record: 115349

I want to do some experimenting with microstrips and other VHF
circuitry. Where can I find small quantities of surface mount
inductors and capacitors?

--
/\ /\ . /____
/\ / \ _/\ / \ /\ / \ /\ /
/ \ / \ / \ /\/ \ / _/_/ Y \ /\/\/ \ /
\/\/ _____/ \/ \ / \/ \/

Richard Christensen
richard@newt.ee.byu.edu Go Cougars!! Beat Utah!!!
richard@smoky.sps.mot.com

3611. headset with microphone needed for phone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-11-30 22:22:14 UTC
From: srs3@crux1.cit.cornell.edu
Message-ID: <3bitum$q41@tuba.cit.cornell.edu>
Source record: 115348
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

well, this is a long shot but i need a headset (one or two ears) with
an attached microphone, like what flight-controlers would wear so
both hands can be free. Are there any catalogs that sell this mail
order?

I would particularly like one that can be used with the telephone.
Radio Schack sells such a thing for $55 which is way way too expensive.

Any info would be appreciated. please send me email

Steve Seidman
srs3@crux3.cit.cornell.edu

3612. PC Board layout Software needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 00:05:05 UTC
From: starin@netcom.com
Message-ID: <starinD03uwI.91F@netcom.com>
Source record: 115351

Does anyone know of any programs that will print out a circuit ready for etching or transfer?

In fact, while I'm at it - how does one go about making their own circuit board. I know of Radio Shacks etching kit, but it falls short of my expectations, simply because I have to figure out the layout of the parts on the copper clad board, and somehow I figure there must be a program out there that will do that for me, and print it out on paper or something ready for transfer.

E-Mail response preferred.

Thanks.
--
Jeffrey
{New York}

3613. Re: Part supplier for sm caps and inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 00:06:50 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3bj42q$k2e@hpscit.sc.hp.com>
Source record: 115350

In article <RICHARD.94Nov30161432@smoky.smoky.sps.mot.com>,
Richard Christensen <richard@smoky.smoky.sps.mot.com> wrote:
>
>I want to do some experimenting with microstrips and other VHF
>circuitry. Where can I find small quantities of surface mount
>inductors and capacitors?
>
>richard@smoky.sps.mot.com
>

Digi-key 1-800-DIGI-KEY

Rick N6RK

3614. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 00:20:38 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3bj4sm$kfr@hpscit.sc.hp.com>
Source record: 115352

In article <D02xwy.IvD@hpqmoea.sqf.hp.com>,
David Stockton <dstock@hpqmdla.sqf.hp.com> wrote:
>
> I guess you're interested in filters for superhets with high IFs.
>Fundamentals have been made to the 200MHz, but these are lab
>curiosities. Quite a number of filters in the 40 MHz upward region are
>built around overtone crystals. The models of the overtone resonances
>
> With the very best mixers, we now find that crystal filters are the
>limiting factor in HF receiver dynamic range. As a general rule, larger
>lumps of quartz are better, no doubt due to peak energy density. Higher
>
> Cheers
> David GM4ZNX
>

Excuse the topic drift, but I would like to make a (frankly opinioned) statement
about receiver architecture. Where is it written that for a ham band
only receiver, you have to upconvert to VHF to get good image rejection?
If I were going to build a homebrew receiver, I would pick a low IF in
between ham bands like 5 MHz. and convert directly to it. Nine separate
ham band filters would do preselection and take care of image rejection.
In fact, you could make the first mixer an image reject mixer and relieve
some of the image filtering difficulty. I would much rather build 9
filters than fool with a VHF IF. Yes, if you are a manufacturer, you
can't leverage the design for the SWL, marine, or other markets, but this
is homebrew ham radio, not the radio business.

Any comments?

Rick N6RK
rkarlqu@scd.hp.com

3615. Re: Part supplier for sm caps and inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 03:08:48 UTC
From: drted@ix.netcom.com
Message-ID: <3bjeo0$cun@ixnews1.ix.netcom.com>
Source record: 115353

In <RICHARD.94Nov30161432@smoky.smoky.sps.mot.com>
richard@smoky.smoky.sps.mot.com (Richard Christensen) writes:

>
>
>I want to do some experimenting with microstrips and other VHF
>circuitry. Where can I find small quantities of surface mount
>inductors and capacitors?
>
>--
> /\ /\ . /____
> /\ / \ _/\ / \ /\ / \ /\ /
>/ \ / \ / \ /\/ \ / _/_/ Y \ /\/\/ \ /
> \/\/ _____/ \/ \ / \/ \/
>---
>Richard Christensen
>richard@newt.ee.byu.edu Go Cougars!! Beat Utah!!!
>richard@smoky.sps.mot.com
>
>

The "ELECTRONIC GOLDMINE" has a broad selection of hobbyist surface mounted
parts. Reach them at 602-451-7454.
Bye... Ted..

3616. Overtone crystals - more problems!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 03:39:22 UTC
From: ian.mitchell@research.utas.edu.au
Message-ID: <3bjgha$3g4@franklin.cc.utas.edu.au>
Source record: 115355

Thanks to all those who responded to my question on
overtone crystal oscillators.

Unfortunately I was not able to get the 3362 to oscillate at 48MHz.

If no one has any ideas can I ask my next question?

The highest fundamental frequency crystal I can find (at low cost) is
32MHz. The catalogue says it's series resonant. The parallel resonant crystals
have a capacitance specified. What is the difference, and will this effect the
circuit of my original post?

Also, since I am trying to use low cost readily available parts as much as possible,
I am using RF chokes as the inductive element in the first LO, I have found that
the 3362 will only oscillate over a smallish range of capacitance, about 50 to 150pf,
with a 1uH inductor for example.

Can anyone explain why this is so?

I would like to use 1uH RF chokes in the LP filter at the front end which has a cut off
of 30Mhz.

Will I experience problems here as well, for the same reason?

Once again, thanks for any repliess.

Cheers, Ian.

3617. mlhack25.zip - Zenith Minisport docs, hints, hacks & goodies

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 05:33:58 UTC
From: bmork@opus-ovh.spk.wa.us
Message-ID: <9412010533.kp13857@SimTel.Coast.NET>
Source record: 115356
Cross-posted to: comp.sys.zenith,rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

I have uploaded to SimTel, the Coast to Coast Software Repository (tm),
(available by anonymous ftp from the primary mirror site OAK.Oakland.Edu
and its mirrors):

SimTel/msdos/packet/
mlhack25.zip Zenith Minisport docs, hints, hacks & goodies

MLHACK25.ZIP is a compendium of newsletters about the Zenith Minisport
laptop computer and its use as a packet radio host computer. Zenith
offers only minimal and expensive support for this popular but
discontinued 8086 compatible notebook computer. Newsletters contain
technical notes, construction projects, operating hints, resources,
architecture details and other related goodies. The Minisport Laptop
Hacker (TM) series is the result of owning and repairing Minisports and
donations from others on Internet and the Amateur Radio packet networks.

Special requirements: None

Changes: Compendium includes Minisport Laptop Hacker #1 - #25.

mlhack25.zip has replaced mlhacker.zip.

FreeText. Uploaded by the author.

Brian Mork
bmork@opus-ovh.spk.wa.us
bmork@comtch.iea.com
ARO ka9snf@ka7fvv.#ewa.wa.usa.na

3618. Circuit for Baycom Modem (TCM3105)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 11:15:26 UTC
From: wasmir@dlep1.itg.ti.com
Message-ID: <wasmir.29.00B4B7CC@dlep1.itg.ti.com>
Source record: 115354

Hello OMs. I just posted the circuit of the modem utilizing the TCM3105
for 2-meter HTs. It's at the rec.radio.amateur.digital.misc in uue-format.

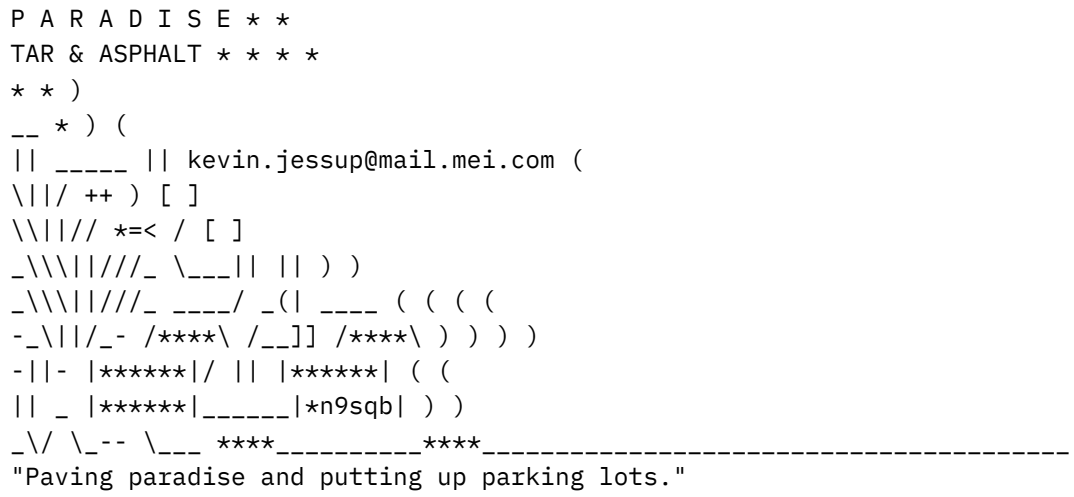
This is my first time to post the circuit (BTNC.GIF) and hope it works.

Goodluck and Mabuhay from Philippines.

3619. Digitized voice and low baud rates.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 13:01:02 UTC
From: kevin.jessup@mail.mei.com
Message-ID: <kevin.jessup.162.01088898@mail.mei.com>
Source record: 115361

FYI, I see Qualcomm has a new variable speed CODEC that claims
"near toll-quality voice" at 3600 baud! It's the Q440 (or was that Q44?)
Anyway, I'm awaiting my sample (and a data sheet) so as to do some
2-meter 9600 baud (or less), real-time digitized voice. Have fun.



"Paving paradise and putting up parking lots."

3620. RE: Frequency Doubling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 15:58:16 UTC
From: koehler@skyfox.usask.ca
Message-ID: <1DEC94.15581648@skyfox.usask.ca>
Source record: 115358

This has been a neat discussion. Just for fun, I thought
I'd try out a standard DBM as a doubler using some proper lab
equipment. I connected a signal generator (50 MHz) to an old
HP 10514A DBM. With the input signal at +10 dBm, the output at
100 MHz was down 12 dB (about what would be expected) and the
50 MHz fundamental was down 45 dB relative to the input. Not bad!

I didn't look at higher harmonics.

Jim, VE5FP

3621. AC line regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 17:11:56 UTC
From: "Colin Schmutter"
Message-ID: <3bl04s$c11@chopin.bcit.bc.ca>
Source record: 115360

I am restoring a Hammarlund SP 600 receiver. The unit works very well except that VFO drifts slightly with changes in filament and B+ voltages due to AC line voltage fluctuations.

Does anyone have advice as to regulating the AC line voltage.

A simpler solution would be preferable.

Any replies would be appreciated.

Thanks

Colin Schmutter
VE7CQH

CSCHMUTTER@BCIT.BC.CA

3622. 30L-1 mounting nut problem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 18:45:59 UTC
From: jwl@walter
Message-ID: <1994Dec1.124559.16222@walter.cray.com>
Source record: 115362

Hi,
I have a 30L-1 that has lost one of the press-in nuts that the feet and/or cabinet screws screw into. I wouldn't bother to worry about it except that this one is one that one of the feet fit into and is also one of them that engages (disengages?) the HV interlock, so if that screw is missing, there is a dead short across the HV and ground.

Has anyone solved this problem? I tried to use a small flame and some of the aluminum solder to hold the nut in, but only succeeded in filling the nut up with solder, thus ruining it. I then tried just to get the Al solder to stick to the chassis, with no luck. I can't put too much heat on it or it would burn up nearby components.

Thanks,
Jim. K4GVO

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3623. Re: AC line regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 20:50:33 UTC
From: lakeith@robins.af.mil
Message-ID: <3blcup$3q5@wrdis02.robins.af.mil>
Source record: 115363

ColinSchmutter wrote:
: I am restoring a Hammarlund SP 600 receiver. The unit works very well except that
: VFO drifts slightly with changes in filament and B+ voltages due to AC line voltage
: fluctuations.

: Does anyone have advice as to regulating the AC line voltage.

: A simpler solution would be preferable.

The simplest solution is a constant voltage transformer between the
rig and the AC line. Sola is the manufacturer that comes to mind.

73,

Larry, KQ4BY

3624. need PC program to emulate oscilloscope

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 20:54:46 UTC
From: drake@oasys.dt.navy.mil
Message-ID: <3bld6mINNaji@oasys.dt.navy.mil>
Source record: 115364
Cross-posted to: rec.radio.amateur.homebrew,cdnswc.micros,cdnswc.scicomp

My son asked if I would request if anyone has or could write a program (BASIC maybe?) which would allow a PC to mimic an oscilloscope. Please email response because I don't normally read this newsgroup.

Thanks

3625. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 21:01:30 UTC
From: alanb@sr.hp.com
Message-ID: <3bldja$5q3@canyon.sr.hp.com>
Source record: 115365

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: Excuse the topic drift, but I would like to make a (frankly opinioned) statement
: about receiver architecture. Where is it written that for a ham band
: only receiver, you have to upconvert to VHF to get good image rejection?
: If I were going to build a homebrew receiver, I would pick a low IF in
: between ham bands like 5 MHz. and convert directly to it. Nine separate
: ham band filters would do preselection and take care of image rejection.
: In fact, you could make the first mixer an image reject mixer and relieve
: some of the image filtering difficulty. I would much rather build 9
: filters than fool with a VHF IF. Yes, if you are a manufacturer, you
: can't leverage the design for the SWL, marine, or other markets, but this
: is homebrew ham radio, not the radio business.

Before frequncy synthesizers, nearly all HF receivers were designed that
way. People want (or think they want) continuous coverage so they can listen
to non-amateur broadcasts. (Even if in practice the only thing they ever
tune to is WWV.) It's the same syndrome we see on VHF FM transceivers,
where you get a free general-coverage scanner with every HT. Unfortunately,
good RF performance doesn't "sell" but feaatures do.

AL N1AL

3626. Re: Overtone crystals - more problems!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 21:53:37 UTC
From: alanb@sr.hp.com
Message-ID: <3blgl1$5q3@canyon.sr.hp.com>
Source record: 115367

Ian Mitchell (ian.mitchell@research.utas.edu.au) wrote:

: ... The catalogue says it's series resonant. The parallel resonant crystals
: have a capacitance specified. What is the difference, and will this effect the
: circuit of my original post?

The difference is in the way they are specified. Any crystal has both a
series and a parallel resonant frequency. Parallel is slightly (a few kHz)
higher than series, depending on load capacitance.

Interesting, but little-known fact: For any given crystal, series and
parallel resonant frequencies are the same for the same load capacitor.
That is: If a crystal has a parallel resonance of F with a parallel
load capacitance of C, it will also have a series resonance of F if
you include a series capacitance of C.

(If you don't use a series capacitor, than series resonance is always
a little lower in frequency than parallel.)

That means you can often use a parallel-resonant crystal in a circuit
designed for series-resonant crystals simply by including a series
capacitor equal to the crystal's specified load capacitance.

AL N1AL

3627. Re: Class AB linear amp question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 22:15:47 UTC
From: lapin@casbah.acns.nwu.edu
Message-ID: <3blhuj$rji@news.acns.nwu.edu>
Source record: 115366

In article <J2y2Ve7.rlforbes@delphi.com>,
Rick Forbes <rlforbes@delphi.com> wrote:
>I am in the process of building a class AB linear amplifier for 160-10 meters.
>I've heard that you can run SSB on a class AB, but do I have to modify it in any
> way to be able to use SSB. I have seen many amps with a SSB switch, what
>is that switch for? Do I need to do something similar to that, or can I just
>switch my radio SSB and have it work as usual without any mods to the amp?
>Thanks for any help.
>
>Rick Forbes
>N9MUT

Rick:

The reason for the SSB/CW switch is usually historical. FCC regs used to have
a maximum power of 1KW average input power to the final stage OR 2KW PEP
input power. On most amplifiers designed under that set of rules the switch
doubled the plate voltage for SSB use.

Of course, today the rules have changed to be 1.5KW output power for both CW
and SSB and the switch is no longer needed.

73, Greg KD9AZ
g.lapin@ieee.org

3628. Best diodes for audio freq clipping?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-01 23:16:45 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-011294151645@140.244.64.75>
Source record: 115270

Anyone have suggestions for the best diodes to be used for clipping an audio frequency signal? I want to clip at about 2.5 volts to protect an A/D converter, probably .7v x 4 diodes in series for 2.8 volts. The signal source can't be fully predicted and could possibly hit 12v. Are there any consideration besides amount of reverse current leakage? ARRL handbook says to do post filtering to get rid of harmonics. Naturally I want to minimize distortion, offset, etc.

Thanks, Tom KG6YJ

3629. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 00:45:56 UTC
From: Bill Meahan <wmeahan@wa8tzg.mi.org>
Message-ID: <3blqo4$ali@oak.oakland.edu>
Source record: 115268

n1ist@netcom.com (Michael L. Ardai) wrote:
>
> There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
> subscribe,

Umm, I **was** subscribed to the QRP list but have received not a single
article for over a month. Checking the ftp site for the daily digest
(ftp.netcom.com:/pub/rander) shows nothing available. Just before I
stopped getting anything, there were a few messages about how there
were big problems with netcom's mail list processing.

Did the list go belly-up or did I somehow just get unsubscribed?

73 de wa8tzg

3630. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 01:00:52 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <D05s5G.8vw@news.hawaii.edu>
Source record: 115271

n1ist@netcom.com (Michael L. Ardai) writes:

>danbl@hprnd.rose.hp.com (Dan Blakley) writes:

>-Would someone kindly post the proceedure to subscribe to the QRP newsgroup.

>There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
>subscribe, send mail to listserv@netcom.com with the body (not subject)
>
>subscribe qrp-l
>
>and you will be automatically subscribed. (BTW, qrp-l ends in lima, not one)
>
>/mike
>n1ist@netcom.com
>Maintainer, BARC lists

And even more importantly is the unsubscribe instructions: Using the
same address above only write:

unsubscribe qrp-l

It is important that these two commands be sent to listserv and
NOT to the list itself! We are plagued with sub and unsub messages
being posted daily to all 400-500 member's mailboxes.

Jeff NH6IL

3631. Yaesu 12VDC Cable Connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 02:58:13 UTC
From: sagcorp@clark.net
Message-ID: <3blrr3$3kn@clarknet.clark.net>
Source record: 115269

I want to standardize all of my car/boat mobile gear 12VDC connectors. The connectors used on the Yaesu 2400 2 meter radio seem a good bet. They are heavy duty flat blades at right angles, moulded into plastic forming a "Tee". I've heard that the Japaneese autos use these connectors but have been unable to find any (male and females) locally at electronics emporiums or in national catalogs. Any body out there with a source/part number??
Lee Mairs, KM4YY

3632. Idiom press?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 07:51:45 UTC
From: ahall@ux4.cso.uiuc.edu
Message-ID: <3bmjmh$88c@vixen.cso.uiuc.edu>
Source record: 115272

Hello!

Anyone got the new address for Idiom press (their old one was
in Deerfield IL). I need to talk with them about the programmed
cmos motorola parts for their superkeyer.

-anyone ever made the superkeyer without that part?

Will they only sell me the kit, or can I get the chip and board only?

TNX for all your help!!
Allen Hall n9rzc@uiuc.edu

ps- oh yeah, was that motorola part hardwired in production for them,
or did Idiom burn it themselves? Anyone been able to get an image from it?

TNX for the help again!

3633. "Frequency-doubling mixers"... to put it another way...

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 09:31:45 UTC
From: ka7oei@uugate.wa7slg.ampr.ORG
Message-ID: <30387@uugate.wa7slg.ampr.org>
Source record: 115273

----- Forwarded message -----

Somehow, it seems that my question concerning 'frequency doubling mixers'
was misinterpreted as being about a 'frequency doubler'.

The basic arrangement is thus:

There are 2 parallel back-to-back diodes. One side, DC grounded, has the
LO fed into it. If you want to convert a 2304 Mhz signal to 304 Mhz,
for example, you feed a 1000 Mhz signal into the LO port, and the
doubled LO frequency (2000 Mhz) mixes with the 2304 Mhz RF signal
and a 304 Mhz signal results.

The other side of the mixer has the RF signal applied to it, and the
IF signal removed from it. It also has a stub tuned to the LO frequency
to shunt that LO signal to ground. The IF is taken off with, typically,
a lowpass arrangement.

The obvious advantage of this arrangement is that it is relatively simple,
and it saves the trouble of having as high frequency an LO as what would
otherwise be necessary. Practically speaking, it was used widely in
MDS-TV arrangements (probably in the "wireless cable" converters nowdays,
some of which use the same frequency range...)

Clearly, it also has some disadvantages. It likely does not have a
very good dynamic range (hence, it is not well-suited to transmit
converters...)

My original post was on this point. How does the performance of
this mixer type compare to the single diode, single-ended mixer?

Obviously, it hasn't the port-port isolation charactaristic of
a singly and doubly-balanced mixer arrangement, but that is a
tradeoff...

<Clint>

ka7oei@uugate.wa7slg.ampr.org

----- End of forwarded message -----

3634. Re: Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 13:43:00 UTC
From: joe.taylor@woodybbs.com
Message-ID: <93.3555.7584.0NFB6D10@woodybbs.com>
Source record: 115283

CHeap to FRee?? That turns my crank.
A few of us build 1 and 2 tube 6L6 tranmsitters and are always looking
for something fundamental around 3-4mHz. I'm working on a push-pull 6L6
transmitter for high end of AM BC band 1100KHz or neighborhood. You got
anything that might work. I'll gladly buy it.
All the Best from Kentucky.
Joe Taylor N4NAS Box 1852 Glasgow, KY 42142-1852

• BgNet 1.0•12 • 049/000: Pipeline BBS - Glasgow, Ky - 502-651-2556

3635. Re: Yaesu 12VDC Cable Connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 15:10:43 UTC
From: miltf@ux1.cso.uiuc.edu
Message-ID: <3bnddj$kbs@vixen.cso.uiuc.edu>
Source record: 115274

sagcorp@clark.net writes:

>I want to standardize all of my car/boat mobile gear 12VDC connectors. The
>connectors used on the Yaesu 2400 2 meter radio seem a good bet. They are
>heavy duty flat blades at right angles, moulded into plastic forming a "Tee".
>I've heard that the Japaneese autos use these connectors but have been unable
>to find any (male and females) locally at electronics emporiums or in national
>catalogs. Any body out there with a source/part number??
>Lee Mairs, KM4YY

I standardized with Molex connectors, 2 pin variety. I make adapters from
manufacturers cable and plugs, usually a short section with the original
equipment connector on one end and my Molex on the other. This keeps the
original connector intact on the radio. The Molex connectors are available
at many hardware, electronic, and other stores. Radio Shack has them with
the crimping tool required. I have had no problem with these connectors over
the past 20 years. I prefer to use an item which is available many places
instead of trying to find an obscure part (which may be discontinued).

Milt, K9QZI

3636. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 19:03:12 UTC
From: jeffrey@kahuna.tmc.edu
Message-ID: <D0769C.B3u@news.hawaii.edu>
Source record: 115277

In article <3blqo4$ali@oak.oakland.edu> Bill Meahan <wmeahan@wa8tzg.mi.org> writes:
>n1ist@netcom.com (Michael L. Ardai) wrote:
>>
>> There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
>> subscribe,
>
>Umm, I **was** subscribed to the QRP list but have received not a single
>article for over a month. Checking the ftp site for the daily digest
>(ftp.netcom.com:/pub/rander) shows nothing available. Just before I
>stopped getting anything, there were a few messages about how there
>were big problems with netcom's mail list processing.
>
>Did the list go belly-up or did I somehow just get unsubscribed?
>
>73 de wa8tzg
>
>

Bill: The net is as busy as ever. Try unsubscribing then resubscribe.
Also, the daily digest can be gotten from:

ftp sunsite.unc.edu
cd pub/academic/agriculture/agronomy
get DAILY.QRP
quit

and waiting in your home directory will be the file DAILY.QRP with
all the day's articles.

.73 from Hawaii,
jeff NH6IL

3637. QUALCOM

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 19:26:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9412021821052664@kbsbbs.com>
Source record: 115280

KJ>FYI, I see Qualcomm has a new variable speed CODEC that claims
KJ>"near toll-quality voice" at 3600 baud! It's the Q440 (or was that
KJ>Q44?) Anyway, I'm awaiting my sample (and a data sheet) so as to do
KJ>some 2-meter 9600 baud (or less), real-time digitized voice. Have

Greetings Kevin:

Thanks for the interesting information. I have used a Qualcom
DDS chip with success and consequently like their product.

I wonder if you can send me a note at your convenience to let me
know how one goes about getting on their new products mailing list
(assuming they have one) and what one must do to qualify for a sample
package?

73 de VE7TMA

Very Best Regards,
T.M. Alldread INTERNET:tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3638. Re: 30L-1 mounting nut problem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 21:11:02 UTC
From: alanb@sr.hp.com
Message-ID: <3bo2h6$rr9@canyon.sr.hp.com>
Source record: 115275

James W. Lynch (jwl@walter) wrote:
: Hi,
: I have a 30L-1 that has lost one of the press-in nuts that the feet
: and/or cabinet screws screw into. I wouldn't bother to worry about it
: except that this one is one that one of the feet fit into and is also
: one of them that engages (disengages?) the HV interlock, so if that
: screw is missing, there is a dead short across the HV and ground.

: Has anyone solved this problem? I tried to use a small flame and some
: of the aluminum solder to hold the nut in, but only succeeded in
: filling the nut up with solder, thus ruining it. I then tried just to
: get the Al solder to stick to the chassis, with no luck. I can't put
: too much heat on it or it would burn up nearby components.

I would go to a well-stocked hardware store and see if I could find
a replacement nut. They are made by Pem, among others. The kind I am
thinking of look like:

```
__________
|__________| <-- nut body
|____| <----- swaged portion
^ Threaded hole
```

You press the swaged portion through the hole in the sheet metal and
then use a blunt pointed tool like a center punch and a hammer to roll
the swaged portion over the sheet metal.

AL N1AL

3639. Re: ### LOOKING FOR PART : TCM3105 IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 21:44:00 UTC
From: djwang@nmrsg.biophys.upenn.edu
Message-ID: <3bo4f0$f2u@netnews.upenn.edu>
Source record: 115276
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc

Found it in a latest catalogue from JDR Microdevices (CA, USA).
$6.95 is the listed price for single unit purchase, but the shipping
is $5.00 for UPS Ground, and $7.50 for 2nd Day Air shipping. Their
Phone/Fax numbers are:

Sales: 800-538-5000
Fax Order: 800-538-5005
BBS: 408-494-1430

D.J. Wang, N2YKP

3640. Re: AC line regulation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 22:45:59 UTC
From: kuehn@hera.cc.bellcore.com
Message-ID: <3bo837$3ec@hera.cc.bellcore.com>
Source record: 115278

In article <3blcup$3q5@wrdis02.robins.af.mil>,
Larry Keith Mr. <lakeith@robins.af.mil> wrote:
>ColinSchmutter wrote:
>: I am restoring a Hammarlund SP 600 receiver. The unit works very well except that
>: VFO drifts slightly with changes in filament and B+ voltages due to AC line voltage
>: fluctuations.
>
>: Does anyone have advice as to regulating the AC line voltage.
>
>: A simpler solution would be preferable.
>
>
>The simplest solution is a constant voltage transformer between the
>rig and the AC line. Sola is the manufacturer that comes to mind.
>
>73,
>
>Larry, KQ4BY

--- A more difficult solution ------------
1. feed VFO tube filament with regulated DC supply

2. Use VR tubes or a couple of HV Zener diodes in series to regulate
B+ supply in VFO.

73,

asis, W2/VU2MKI

---
standard disclaimer
Opinions are mine ......

3641. Need PCB source for Roanoke Doppler system

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-02 23:29:28 UTC
From: phil@slacc.com
Message-ID: <021032MKRTGDJKOVLYBR@slacc.com>
Source record: 115279

IP>If anyone has built the Roanoke Doppler system displayed in the TAB book,
IP>"TRANSMITTER HUNTING, Radio Direction Finding Simplified", by Moell and

IP>Thanks in advance.

IP>N7QHK
IP>Jim Gerwitz

IP>Internet add: P06288@email.mot.com

Marty Mitchell N6NAV
340 Otero
Newport Beach, Ca. 92660
(714) 760-6060

Tom Lewis AB5CK
6721 Rolling Hills Dr.
North Richland Hills Tx. 76180
(817) 428-8200

Contact these people directly concerning PC Boards/Kits...

for more info on Foxhunting/direction finding you might want to join the
Fox-List mailing list. Send a one line message to "listserv@netcom.com"
(without the quotes, of course) that says "subscribe fox-list" (once
again, no quotes). I found out about it in the latest 73 magazine in
the "Homing In" column.
I have not finished putting together the AB5CK board yet so cannot
comment on performance but it is a very nicely done board, double sided
and plated through holes. It solders very well and it is now "version
3". This is the same board that was advertised a couple of times in 73
magazine about a year ago under the name of "Davis RF Devices".

Hope this helps...
Phil@SLACC.com

--
SLACC STACK BBS - St. Louis, Missouri USA
The Bulletin Board Service of the St. Louis Area Computer Club
For information, email to: server@slacc.com Subject: HELP
+1 314.367.1903

3642. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 00:32:35 UTC
From: <>
Message-ID: <3boeb3$48e@male.EBay.Sun.COM>
Source record: 115284

In article ali@oak.oakland.edu, Bill Meahan <wmeahan@wa8tzg.mi.org> writes:
>n1ist@netcom.com (Michael L. Ardai) wrote:
>>
>> There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
>> subscribe,
>
>Umm, I **was** subscribed to the QRP list but have received not a single
>article for over a month. Checking the ftp site for the daily digest
>(ftp.netcom.com:/pub/rander) shows nothing available. Just before I
>stopped getting anything, there were a few messages about how there
>were big problems with netcom's mail list processing.
>
>Did the list go belly-up or did I somehow just get unsubscribed?
>
>73 de wa8tzg
>
>

I think the qrp list archives are on sunsite.unc.edu in
/pub/academic/agriculture/agronomy/hamradio or something
similar (where else ??) . I know for a fact they are NOT
on ftp.netcom.com:/pub/rander because I own that directory.

The QRP list is alive and well and averaging about 20
or so messages a day. Perhaps you were automagically
unsubscribed?

73 de WB6TPU

3643. Re: Drake T4XB+ HQ170AC-VHF. Keep or Dump?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 02:40:11 UTC
From: Joe@interramp.com
Message-ID: <3bom6j$2ca@www.interramp.com>
Source record: 115281
Cross-posted to: rec.radio.swap,rec.radio.shortwave,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.antiques.radio+phono

In article <CzzLKJ.AsI@nntpa.cb.att.com>, <jsw@physics.att.com> writes:
> Newsgroups:
rec.radio.amateur.misc,rec.radio.swap,rec.radio.amateur.equipment,rec.antiques.
radio+phono,rec.radio.shortwave,rec.radio.amateur.homebrew
> Path:
interramp.com!psinntp!scisun!ees1a0.engr.ccny.cuny.edu!fnnews.fnal.gov!gw1.att.
com!nntpa!not-for-mail
> From: jsw@physics.att.com (Joseph Weiner)
> Subject: Drake T4XB+ HQ170AC-VHF. Keep or Dump?
> Message-ID: <CzzLKJ.AsI@nntpa.cb.att.com>
> Sender: news@nntpa.cb.att.com (Netnews Administration)
> Nntp-Posting-Host: physics.div111.att.com
> Organization: AT&T
> X-Newsreader: TIN [version 1.2 PL2]
> Date: Mon, 28 Nov 1994 16:53:06 GMT
> Lines: 20
> Xref: interramp.com rec.radio.amateur.misc:10931 rec.radio.swap:5522
rec.radio.amateur.equipment:4230 rec.antiques.radio+phono:1990
rec.radio.shortwave:9209 rec.radio.amateur.homebrew:2306
>
> I am getting back on the air after many years. I have a
> Drake T4XB transmitter and Hammarlund HQ170AC-VHF receiver
> that I had bought in the sixties. It is clear to me that
> the Hammarlund has got to go. The question is:
>
> 1. Is it worth getting a used Drake R4B receiver from somewhere
> or is equipment so much better these days that it is not
> worth bothering?
> 2. What is the going rate to buy an R4B and where would
> I get one?
> 3. What would the going rates be to sell the T4XB or HQ170
> and where would I sell them? Are they collectors' items?
> 4. How have xmtrs & rcvrs improved in the last 25 years?
> Sensitivity, selectivity, stability, features, programmability?
>
> Note: I started when I was 9 yrs old so I am not as old as
> this msg makes me seem.
>
> Thanks,
> Joe
JOE: You probably want a serious reply to your question, not just a lot of
FLABS (Folklore and B___ S___). But, it's the end of a long week and I've been

adjustingmy attitude with 12-year-old single malt Scotch, so here goes. Do not dump those two old classics. I was licensed in 1958 and will be 50 years old next week. I drive a 72 VW Beetle, write with a Parker 51 fountain pen given to me by my grandfather when I entered high school, and cut my grass with a push mower. Keep the old stuff. Clean it up. Get some tuner cleaner at RAdio Shack and blast all the variable capacitors and potentiometers'; that will clean out a lot of the problems. Replace the fileter capacitors. Make a list of the tube types and whenvever you encounter tubes for sale, buy some. Of course, you probably ought ot go ahead and buy yourself a recent model rice box from ICOM (I use the IC-129; the IC-735 is a classic), Kenwood, or Yaesu and get on the air. But, keep the old stuff. Make yur ice cream in a hand-cranked freezer. Drink our beer from the bottle. Be eccentric. You only live once and it's your life.

3644. Re: headset with microphone needed for phone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 02:59:18 UTC
From: Joe@interramp.com
Message-ID: <3bonaa$2ca@www.interramp.com>
Source record: 115282
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <3bitum$q41@tuba.cit.cornell.edu>, <srs3@crux1.cit.cornell.edu>
writes:
> Path:
interramp.com!psinntp!rutgers!netnews.upenn.edu!dsinc!spool.mu.edu!caen!news.tc
cornell.edu!travelers.mail.cornell.edu!tuba.cit.cornell.edu!crux1!srs3
> From: srs3@crux1.cit.cornell.edu (Motti)
> Newsgroups: rec.radio.amateur.equipment,rec.radio.amateur.homebrew
> Subject: headset with microphone needed for phone
> Date: 30 Nov 1994 22:22:14 GMT
> Organization: Cornell University
> Lines: 13
> Message-ID: <3bitum$q41@tuba.cit.cornell.edu>
> NNTP-Posting-Host: 128.253.232.60
> X-Newsreader: NN version 6.5.0 #6 (NOV)
> Xref: interramp.com rec.radio.amateur.equipment:4262
rec.radio.amateur.homebrew:2326
>
> well, this is a long shot but i need a headset (one or two ears) with
> an attached microphone, like what flight-controlers would wear so
> both hands can be free. Are there any catalogs that sell this mail
> order?
>
> I would particularly like one that can be used with the telephone.
> Radio Schack sells such a thing for $55 which is way way too expensive.
>
> Any info would be appreciated. please send me email
>
> Steve Seidman
> srs3@crux3.cit.cornell.edu
>
STEVE: The top-of-the-line headset-mikes generally available on the amateur
market are the Heil headset-mikes. But, they cost a good bit more than the
Radio Shack $55. The most expensive Heil has paded dual-earpiece headset with
a boom mike at $122. You can get down to the single small earphone with boom
mike for $65. Several other models between those two. Be careful. the Heil
mikes are engineered for excellent communications audio. The HC-4 peaks audio
response at 2000 hz, great for adding a little pucnh to the audio. The HC-5
mike peaks about 2100 -- a little smoother than the HC-4. But -- they are
low-impeadance, 600 ohm mikes without built-in pre-amps. They may not work on
yur rig. I had to return the one I bought because it would not provide
sufficient audio to drive my rig and Heil said the ony fix wa a modificatin to
the rig.

Now, Asden makes a boom mike-headset combo for $70.00. Mike is low impeadance (500 ohm) and does not have built-in preamp.

Good luck.

73, Joe.

3645. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 15:00:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.315.546@acenet.com>
Source record: 115287

Newsgroups: rec.radio.amateur.homebrew

BM>n1ist@netcom.com (Michael L. Ardai) wrote:
BM>>
BM>> There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
BM>> subscribe,

BM>Umm, I **was** subscribed to the QRP list but have received not a single
BM>article for over a month. Checking the ftp site for the daily digest
BM>(ftp.netcom.com:/pub/rander) shows nothing available. Just before I
BM>stopped getting anything, there were a few messages about how there
BM>were big problems with netcom's mail list processing.

BM>Did the list go belly-up or did I somehow just get unsubscribed?

Hi - I found a problem also. NOW I get a slew of messages every day
that are in the E-mail (private) area on this BBS, and they are ALL
addressed to "BRIAN CARLING" yet the senders did not send them to me.
Most of them seem to be adressing QRP topics, but I can't tell which
ones are REALLY for me. Drives me crazy! I may try a quick UNSUBSCRIBE &
see if it helps!

brian.carling@acenet.com

 SLMR 2.1a And tonight's forecast: DARK!

3646. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 15:04:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.316.546@acenet.com>
Source record: 115288

Newsgroups: rec.radio.amateur.homebrew

JE>>There is no qrp newsgroup. There is, however, the qrp-l mailing list. To
JE>>subscribe, send mail to listserv@netcom.com with the body (not subject)
JE>>
JE>>subscribe qrp-l
JE>>
JE>>and you will be automatically subscribed. (BTW, qrp-l ends in lima, not one
JE>>
JE>>/mike
JE>>n1ist@netcom.com
JE>>Maintainer, BARC lists

JE>And even more importantly is the unsubscribe instructions: Using the
JE>same address above only write:

JE>unsubscribe qrp-l

JE>It is important that these two commands be sent to listserv and
JE>*NOT* to the list itself! We are plagued with sub and unsub messages
JE>being posted daily to all 400-500 member's mailboxes.

Jeff - a question about this "mailing list."

Is it what is causing me to get dozens of messages every day in the
E-mail area of this BBS ALL addressed to BRIAN CARLING, yet almost none
of them are really for me? Isn't there some other way of seperating
these out from my regular Internet E-mail?

• SLMR 2.1a • It's always darkest just before you step on the cat!

3647. Idiom press?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 15:08:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.317.546@acenet.com>
Source record: 115289

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

AJH>Anyone got the new address for Idiom press (their old one was
AJH>in Deerfield IL). I need to talk with them about the programmed
AJH>cmos motorola parts for their superkeyer.

Here's the new address for Idiot Press :-)

Idiom Press (No phone given)
Box 1025
Geyserville, CA 95441

If you have the names & addresses of any other places where you
can buy parts/kits please pass them along for my list.

&#65533; SLMR 2.1a &#65533; Despair: an extra tire in da trunk!

3648. Re: RF Switching without relays ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 15:45:22 UTC
From: stevem6054@aol.com
Message-ID: <3bq3qi$n9@newsbf01.news.aol.com>
Source record: 115285

In article <4NOV199422283505@vax2.concordia.ca>, drobert@vax2.concordia.ca (Denis Robert, ve2ilf) writes:

Look for the series of books by Doug Demaw W1FB on QRP and Design Notebook. Also see the classic book "Solid State Design for the Radio Amateur.
They all have simple diode switches. I think they are easier to build than relays.
Thanks 73 de Steve KG7PV

3649. Re: CABLE TV CHANNEL 18 T

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 16:34:00 UTC
From: jim.dunstan@oln.com
Message-ID: <1f0.785.1741@oln.com>
Source record: 115292

-=> Quoting Ken Lotts to All <=-

KL> I interfere with cable ch 18 when operating 2 mtrs (Packet)..
KL> I called the cable co. and discovered that ch 18 = the 2 mtr band..
KL> What to do?

Is the problem in your own QTH ..... or do your neighbours get it as well?
You can usually eliminate the problem with a ferrite doughnut on the cable.

The Radio Shack cores will work .... the square ones that come apart. The problem is almost certainly parallel currents on the cable shield .... it is these currents on the cable that cause the interference. This in combination with running the lowest useable power from your 2 mtr rig. It will also help if you can get your 2 mtr ant. as high as possible .... away from house wiring etc.

Of course the second ..... and more important reason for the interference is the fact the video signal is at approx. 145 MHTZ !!!! pretty darn close.

sooooo

1. ferrit cores ..... as near to the problem TV
2. run lowest possible power that gets the job done.
3. keep the 2mtr ant as high as possible .... clear of wiring etc
4. use a directional ant if possible.

Jim VE3CI Thunder Bay, Ontario

jim.dunstan@oln.com

... Catch the Blue Wave!
___ Blue Wave/QWK v2.12

3650. Re: DRAKE T4XB+ HQ170AC-V

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 17:06:00 UTC
From: jim.dunstan@oln.com
Message-ID: <1f0.786.1741@oln.com>
Source record: 115293

-=> Quoting Joseph Weiner to All <=-

JW> the Hammarlund has got to go. The question is:

JW> 1. Is it worth getting a used Drake R4B receiver from somewhere
JW> or is equipment so much better these days that it is not
JW> worth bothering?

Your are correct about the Hammurlund receiver ..... just does not
cut it in performance. The Drake R4B receiver performance is
perfectly useable. The question is getting one that is is in
good working order. They are pretty much collectors items these
days. If you have any performance problems it will probably be
in frequency stability .... remember the unit is 2 decades old
.... uses tubes .... operates at fairly high temps. etc.

JW> 2. What is the going rate to buy an R4B and where would
JW> I get one?

Check out ham flea markets etc. You should get one fairly cheap
.... if the price starts to go up it will be for collectors Hi.

JW> 3. What would the going rates be to sell the T4XB or HQ170
JW> and where would I sell them? Are they collectors' items?

If you want a good price you need to go the collectors route rather
than trying to sell them as useable pieces.

JW> 4. How have xmtrs & rcvrs improved in the last 25 years?
JW> Sensitivity, selectivity, stability, features, programmability?

The main developments have been in front end design .... broad banding
..... which of course goes hand in hand with solid state design.

The second development is in frequency generatiion (digital) and mixing
with high freuency 1st if....(70 mhtz) ..... this eliminates the old
problems of image frequencies.

The results are full receiver coverage through the full HF spectrum
with great stability and no image interference.

The same thing is true of the xmiter ..... quick band changing with
no tuning. Once experienced ..... going back to the old design
built around tubes .... like the t4xb is not very desirable!!!

So have fun getting back into it Joe.

Jim

VE3CI

... The last thing I saw was this Big Blue Wave!
___ Blue Wave/QWK v2.12

3651. Re: QUALCOM

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 17:40:31 UTC
From: kevin jessup <kevin.jessup@mixcom.mixcom.com>
Message-ID: <1994Dec3.174031.9471@mixcom.com>
Source record: 115286

In <9412021821052664@kbsbbs.com> tom.alldread@kbsbbs.com (Tom Alldread) writes:

>KJ>FYI, I see Qualcomm has a new variable speed CODEC that claims
>KJ>"near toll-quality voice" at 3600 baud! It's the Q440 (or was that
>KJ>Q44?) Anyway, I'm awaiting my sample (and a data sheet) so as to do
>KJ>some 2-meter 9600 baud (or less), real-time digitized voice. Have

>Greetings Kevin:

> Thanks for the interesting information. I have used a Qualcom
>DDS chip with success and consequently like their product.

> I wonder if you can send me a note at your convenience to let me
>know how one goes about getting on their new products mailing list
>(assuming they have one) and what one must do to qualify for a sample
>package?

The chip was advertised on page 142 of the October issue of "Microwaves
and RF" magazine. I am attempting to get a sample through a local
electronic distributor and not directly from Qualcomm.

BTW, the chip is the Q4400. Sorry about the initial confusion.

Features:
Variable data restes from 800 to 9600 baud
Single chip, full duplex
Low power consumption for portable applications

Typical applications:
Voice-over-data systems
Digital VSAT
Voice mail
Secure telephone and wireless
Voice storage systems
Voice annotation

Hope you can get your hands on one. Still waiting for mine.

--
P A R A D I S E __ * * * * *
TAR & ASPHALT _____ || kevin.jessup@mail.mei.com
\||/ ++) [ ]
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```
|| _ |******|______|******| ) ) "Paving the Earth" ) )
_\/ \_-- \___ ****__________****_____________________________________
```

3652. Need Idea, Battery Backup IC25A

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-03 17:45:57 UTC
From: teixeira@ccnet.com
Message-ID: <3bqasl$ol3@ccnet.ccnet.com>
Source record: 115190

Every time I turn my power supply offI loose the memories on my IC15A 2 meter rig. Any ideas on a battery backup, type and size?

Thanks,
Don N6FNL

3653. Re: MCL SRA-1's at hamfests

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 01:29:34 UTC
From: landisj@drager.com
Message-ID: <1994Dec3.212934.216@drager.com>
Source record: 115290

In article <1994Nov25.203903.4096@wb3ffv.wb3ffv.ampr.org>,
Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski) writes:
> Just a note to add to all the talk about the mixers. I'm in the
> Washington DC/Baltimore area, and there is a major surplus parts
> dealer, with Ohio license plates, who hits every significant hamfest in
[snip]
I had planned to buy 6 or so from this guy at the last hamfest of the year
here, the RFHill fest. As luck would have it, it was all but rained out, and
he didn't show. I'm down to 1 now!

Joe - AA3GN
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@drager.com - Ax25: AA3GN@WA3TSW.#EPA.PA.US

3654. Re: Specs of Motorola 9038 & 8925

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 03:50:02 UTC
From: kc4ymb@aol.com
Message-ID: <3bre9a$ahg@newsbf01.news.aol.com>
Source record: 115291

In article <Cy41D5.E0q@draco.nova.edu>, eccles@alpha.acast.nova.edu (Brian Eccles) writes:

These numbers look like date codes. Are you sure they are part numbers?

3655. 5 Watt Carbon Resistors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 05:49:24 UTC
From: GCerny@ix.netcom.com
Message-ID: <3brl94$4cc@ixnews1.ix.netcom.com>
Source record: 115294

Does anyone know where I can get 2 5 watt 41 ohm carbons. I can't find them locally and every mail order company seems to want a 25 buck minimum order. I can't use wire wounds because its for an RF circuit.

Any help or advice is appreciated.

Glenn..

3656. Re: Specs of Motorola 9038 & 8925

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 08:38:37 UTC
From: phantom@wwa.com
Message-ID: <3brv6d$k7s@sashimi.wwa.com>
Source record: 115295

Kc4ymb (kc4ymb@aol.com) wrote:
: In article <Cy41D5.E0q@draco.nova.edu>, eccles@alpha.acast.nova.edu (Brian
: Eccles) writes:

: These numbers look like date codes. Are you sure they are part numbers?

I do not think that those are date codes. I have my GP-300 battery and look at
it I have a date code of 436. This means 1994 week 36. Now if the above are
date codes that would meand YYMM I tried to confirm it but the moto sales personI wanted to
talk to to ask the question just bailed from the frequency.
it would make sense if they are date codes.. because the product? number
on this battery reads: HNN9628A.

---
73 DE N9SRW On the Air
Leif Ericksen 442.975+ 114.8PL && 442.900+ 114.8PL MDC 1200
phantom@gagme.wwa.com If you can hear it does it matter?
n9srw@fishfar.org www page: http://gagme.wwa.com/~phantom/

3657. Re: schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 09:06:40 UTC
From: s2202629@np.ac.sg
Message-ID: <3bs0r0$dll@nova.np.ac.sg>
Source record: 115305

In article <94120116450665@posnet.co.uk>,
Paul Whatton <paul.whatton@posnet.co.uk> wrote:

> JL> Does anyone know where i can ftp (or otherwise) schematics/docs/etc..
> JL> for a simple 1200bps TNC for use on 2 Metres?
>
>Hello James. Look around for a file caled BAYCOM. This is a simple little
>TNC using a modem chip and few other components. Almost all the packet
>radio s/w will drive it OK and most make reference to it in their docs.

I believe these critters are called a "Packet Modem" and not a TNC.
I'm trying to build one myself, by have trouble finding the TCM3105 locally,
will be trying to mail order them from the US though...

Rgds!

3658. Re: headset with microphone needed for phone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 09:32:46 UTC
From: tgold@microvst.demon.co.uk
Message-ID: <786533566snz@microvst.demon.co.uk>
Source record: 115296
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <3bonaa$2ca@www.interramp.com> Joe@interramp.com writes:

> STEVE: The top-of-the-line headset-mikes generally available on the amateur
>
> market are the Heil headset-mikes. But, they cost a good bit more than the
>
> Radio Shack $55. The most expensive Heil has paded dual-earpiece headset with
>

I thought many professionals use Plantronics. Anyone know sources?

--

Tony - G3SKR / AA2PM / tgold@microvst.demon.co.uk

3659. Re: Yaesu 12VDC Cable Connectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 10:27:48 UTC
From: Gerald Schmitt <ggs@aerie.lanl.gov>
Message-ID: <3bsnmh$jm9@newshost.lanl.gov>
Source record: 115304

I use trailer wiring connectors in the two and three
pin types. I install then so ground and permantly hot
are next together and switched hot is on the end. This
way equipment needing ground and hot only can plug in
with a two pin connector of the same type in the same
vehicle connector. I use the same system in the shack.
These connectors are the black rubber coated ones with
bullet connectors. Heavy duty ones are available from
AES in Clearwater Florida (only this AES location) they
are 10 ga and will easily handle a HF or big VHF rig.
73 de Jerry

3660. Re: 30L-1 mounting nut problem

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 14:28:56 UTC
From: zlau@arrl.org
Message-ID: <1994Dec4.142856.13455@arrl.org>
Source record: 115298

Alan Bloom (alanb@sr.hp.com) wrote:
: James W. Lynch (jwl@walter) wrote:
: : Hi,
: : I have a 30L-1 that has lost one of the press-in nuts that the feet
: : and/or cabinet screws screw into. I wouldn't bother to worry about it
: : except that this one is one that one of the feet fit into and is also
: : one of them that engages (disengages?) the HV interlock, so if that
: : screw is missing, there is a dead short across the HV and ground.

How about replacing the nut with a tapped piece of sheet metal?
You might even use some double stick tape to hold it in place if
you are worried about further damaging its collector value.

: I would go to a well-stocked hardware store and see if I could find
: a replacement nut. They are made by Pem, among others. The kind I am
: thinking of look like:
: __________
: |__________| <-- nut body
: |____| <----- swaged portion
: ^ Threaded hole

: You press the swaged portion through the hole in the sheet metal and
: then use a blunt pointed tool like a center punch and a hammer to roll
: the swaged portion over the sheet metal.

Sorry, Al, you aren't suppose to use a hammer. If you SLOWLY force the
two together, the metal will flow and the nut will bond to the sheet
metal. Ideally, you use a punch/anvil setup. A vise is probably more
practical. A sheet metal brake also works.

Also, you aren't suppose to deburr the hole before you press the two
together.
(PEM) Penn Engineering and Manufacturing Corp 215-766-8853

Small Parts (mail order supplier) 305-558-1255
PO Box 4650
13980 NW 58th CT
Miami Lakes FL 33014-0650

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3661. Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 17:42:21 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec4.174221.8777@ke4zv.atl.ga.us>
Source record: 115297

In article <3bj4sm$kfr@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>
>Excuse the topic drift, but I would like to make a (frankly opinioned) statement
>about receiver architecture. Where is it written that for a ham band
>only receiver, you have to upconvert to VHF to get good image rejection?
>If I were going to build a homebrew receiver, I would pick a low IF in
>between ham bands like 5 MHz. and convert directly to it. Nine separate
>ham band filters would do preselection and take care of image rejection.
>In fact, you could make the first mixer an image reject mixer and relieve
>some of the image filtering difficulty. I would much rather build 9
>filters than fool with a VHF IF. Yes, if you are a manufacturer, you
>can't leverage the design for the SWL, marine, or other markets, but this
>is homebrew ham radio, not the radio business.
>
>Any comments?

Image rejection is only part of the problem. With a 5 MHz first IF,
160 and 80 will tune backwards with respect to the other bands, and
sidebands will be reversed. The 3rd harmonic of the 40 meter LO will
present difficult in band products. The 10 MHz band will have a nasty
problem with an in band LO signal. Etc. Birdies, birdies, birdies.

With an upconverted first IF, nearly all these problems can be avoided.
Since the first IF need only consist of a roofing filter, which can be
a simple helical design, a SBL-1, a MAR-4, another SBL-1 and a 51 MHz
crystal second LO, and another MAR-4 as a post amp, to get you down to
a traditional 9 MHz 2nd IF strip, that part's pretty trivial. Using a
60 to 90 MHz VCO will give you continous tuning of the HF spectrum with
no birdies, backward tuning, or image problems. The VCO can be easily
controlled with a PLL synthesizer, or made as an actual mechanically
tuned VFO with reasonable stability with today's components. Simply
preloading 4 into the most significant digit of a counter would give
you a direct reading digital dial. You might want to add switched
preselector filters if you're in a high RF area. Sounds like nirvana
to me.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3662. Auto Voice ID'er by K4DPK

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 20:56:41 UTC
From: DonSimp@ix.netcom.com
Message-ID: <3btae9$hd6@ixnews1.ix.netcom.com>
Source record: 115299

I have found a guy that is building a 10 minute voice IDer. This thing works great on HF. I have been looking for something like this for a long time.

1) Digital Voice Recorder ID's
2) Direct Audio input to Rig
3) You record up to a 10 second announcement
4) You adjust it for every 10 minutes.

This guy's name is Phil Chambley and he lives in Rome Ga.
His address is;

K4DPK
Phil Chambley
28 East Camilia Rd. NE
Rome, Ga. 30161

(706) 232-4618 or (706) 235-4275

I think he is getting about 90 bucks for these things. I love mine and I suggest you jump on it.

Don Simpson KO4TA
3.975 mhz @ 02:00 zulu

3663. Need Help with old Motorola

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 21:57:07 UTC
From: hanebuth@eden.rutgers.edu
Message-ID: <3btdvj$2d5@er5.rutgers.edu>
Source record: 115300

I have an old MoCom-70 Mobil Radio (MOD# U44BBN3110A) c. 1975

Here is what I need help with:
Owners and or Service Manuals
Crystal Unit Plug-ins. Does anyone know how these were made, and would
it be possible to build a replacement since the chances of locating are slim.

Thanks
-Stu
--
* Stuart Hanebuth * Minister of the Obsolete *
* hanebuth@eden.rutgers.edu * Dogberts New Ruling Class *
* (908) 932-8319 Rutgers University * My XT is faster than my 386-40 *
* (908) 745-7685 TeleType (For Real) * running windows, and my XT was FREE! *

3664. Re: Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-04 22:12:47 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <3btesv$bgk@proffa.cc.tut.fi>
Source record: 115301

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

> Image rejection is only part of the problem. With a 5 MHz first IF,
> 160 and 80 will tune backwards with respect to the other bands, and
> sidebands will be reversed. The 3rd harmonic of the 40 meter LO will
> present difficult in band products. The 10 MHz band will have a nasty
> problem with an in band LO signal. Etc. Birdies, birdies, birdies.

I reread Rickhard's original article and I didn't find anything that would
suggest fixed converters and a _tunable_ first IF around 5 MHz. Your
concerns are of course very important for a tunable IF-system.

However, if a fixed IF around 5 MHz is used, the tunning is always
forward no matter if the LO is above or below RF. The sideband is
reversed if the LO is above RF.

The de facto standard for 160, 80 and 40 m is LSB, so it would be
natural to use LO above RF for these bands and LO below RF for the
rest of the bands. This way you need only one BFO crystal.

However, for the 10 MHz band the LO is inconviniently close to the IF
and thus the IF had to be lowered a bit or LO above RF must be used
for this band. A quick check for the other bands did not show any
LO fundamentals or harmonics on the band in use, but the second harmonic
of the 20 m band LO (9 MHz) will fall on the 18 MHz band. This is only a
problem, if multiple receivers are on the same site.

> With an upconverted first IF, nearly all these problems can be avoided.
> Since the first IF need only consist of a roofing filter, which can be
> a simple helical design, a SBL-1, a MAR-4, another SBL-1 and a 51 MHz
> crystal second LO, and another MAR-4 as a post amp, to get you down to
> a traditional 9 MHz 2nd IF strip, that part's pretty trivial.

MAR-4 is not very suitable for this purpose as the noise figure is high
and the gain is so low that it will not even mask the noise of the
following stage. MAV-11 has lower noise, more gain and practically
the same (input) intercept point as MAR-4.

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

3665. Amateur Radio Clubs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 00:49:00 UTC
From: Darren O'Connor <oconnord@ucsu.Colorado.EDU>
Message-ID: <Pine.OSF.3.91.941204174644.14160A-100000@ucsu.Colorado.EDU>
Source record: 115302

Does anyone know of amateur radio clubs in the Boulder Colorado area?

Thanks in advance,
Darren

3666. Posting #2: >>RF Parts Data /Software Read more...<<

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 01:48:21 UTC
From: lascal@magritte.its.rpi.edu
Message-ID: <3btrh5$ov2@usenet.rpi.edu>
Source record: 115303
Cross-posted to: rec.radio.amateur.homebrew,sci.electronics

Note, lancedude will be down over our christmas break. (will go down in about 2 weeks, and return about 3-4 weeks later).

Thanks to those who have contributed, I'm in the process of organizing the stuff....

My original message posted a couple weeks ago...
repeated now:

##

I've been collecting parts data, mostly RF parts data and utilities for many months, and I've put them on my computer. They are now available by anonymous FTP (or available via mosaic's ftp interface... more on that later) for now. If things go well, this availability will continue.

I have two requests:
1) please ftp the files between 7 am and 11 pm, the computer is in my dorm room, and the drive is loud.
2) Please contribute!!

More on Item 2: If you have any parts data on RF transistors, diodes, anything, please let me know, and I'll add it to the archive. Also, if you have any free software/utilities relating to RF circuit design, the same applies.

I have the following:

-Motorola RF data (which rev I'm not sure), noise and s parameter data files that they provide on disk.
- NEC RF data (same as above) and plotting/selection utilities (from the wireless sampler I won at packrats this year)
- HP parts data (and hp appcad in the software directory) that came with hp app-cad

- some spice models for op-amps and such

That's it, so if you know where I can get more, please let me know!

Here's the addr: lancedude.stu.rpi.edu

The directory structure is a little Kooky, here's a summary

pub/Stuff/Electronics
pub/Stuff/Electronics/Data
pub/Stuff/Electronics/Data/RF_DATA

pub/Stuff/Electronics/Data/RF_DATA/moto
pub/Stuff/Electronics/Data/RF_DATA/nec_si
pub/Stuff/Electronics/Data/RF_DATA/nec_gaas
pub/Stuff/Electronics/Data/RF_DATA/HP

there's lots more there... poke around and find out for yourself

You can also get to lancedude through my www home page at rpi,
there's an FTP link to lancedude there (addr is in my sig).

73 and good luck,
de WS2B

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
FINALLY, A WWW PAGE -> http://www.rpi.edu/~lascal/
Mount Greylock Expeditionairy Farce Secret agent #52,342

3667. Re: QRP Newsgroup

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 10:47:12 UTC
From: s2202629@np.ac.sg
Message-ID: <3bur3g$npa@nova.np.ac.sg>
Source record: 115308

In article <2a6.315.546@acenet.com>,
Brian Carling <brian.carling@acenet.com> wrote:

>Hi - I found a problem also. NOW I get a slew of messages every day
>that are in the E-mail (private) area on this BBS, and they are ALL
>addressed to "BRIAN CARLING" yet the senders did not send them to me.
>Most of them seem to be adressing QRP topics, but I can't tell which
>ones are REALLY for me. Drives me crazy! I may try a quick UNSUBSCRIBE &
>see if it helps!
>
>brian.carling@acenet.com

Thats what you call a mailing list!

Rgds!

3668. how much heat can diod take?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 11:34:21 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <3butrt$1pvh@yuma.ACNS.ColoState.EDU>
Source record: 115306

I recently put a kit together a 40 meter and the designer said it
was important to keep all parts as close to the board as possible.
So it was nearly impossible to heat sink the diods and transistors.
They were all fairly basic zeners and the trans were mostly 2n222s.
I ran into a new piece called a polystyrene cap and the docs said to
be extra carefull about getting them to hot, so i fudged and picked
them up enough to heat sink them. In general how close to the board
do the parts need to be? And how much heat can they take comeing from
the soldering iron. I was using a 15 wat.
Thanks Robert KB0PED

3669. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 11:41:25 UTC
From: dstock@hpqmdla.sqf.hp.com
Message-ID: <D0C5t2.1os@hpqmoea.sqf.hp.com>
Source record: 115312

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: Excuse the topic drift, but I would like to make a (frankly opinioned) statement
: about receiver architecture. Where is it written that for a ham band
: only receiver, you have to upconvert to VHF to get good image rejection?
<snip>
: Any comments?
: Rick N6RK

Nowhere is it written that you have to upconvert, nowhere is it written that you must not. It is a free choice between techniques offering different mixes of advantages and disadvantages. I've designed and built receivers using both approaches over the years.

The original question, about filters based on OVERTONE crystals, without much other information, posed a quandry. Is he interested in using the fundamental modes of crystals designed for overtone oscillator use to make filters in the usual frequency range of homebrew xtal filters, or is he interested in higher frequency filters where xtals need to operate on their overtone modes?

If he wants to use the fundamental modes of "overtone xtals" the equivalent circuit parameters will be a bit different to those of xtals intended for fundamental use of the same fundamental freq, so I guessed that he was wanting to build filter using overtone modes.

Going to a low first IF (only IF?) like you mentioned has a variety of advantages. Xtal filters at lower frequencies are more linear. Local oscillators are on lower frequencies, so there is a phase noise advantage. Mixers are usually more linear due to switching speed effects.

These advantages are real and powerful.

The disadvantages are spurious responses and breaks in coverage. If DC-30MHz coverage is a "must", then you have no choice but to upconvert. If you just want some or all amateur bands, then you must decide whether the spurii in those amateur bands you want can be got to levels low enough for you to accept. Upconversion doesn't magically fix all spurious responses, it has its own, but which may prove easier to handle.

For several years, I've been playing with the design of an upconverting transceiver with a view to making something where the disadvantages associated with up-conversion are minimised. It would have been far easier to have just gone for an amateur bands only aproach like the Omni etc, but I want a challenge, and it isn't too difficult to beat

the performance of the current crop of Oriental HF boxes.

Even some of the best designs contain a number of oversights, there are few radios today with low distortion IF's, detectors, and audio. After the advent of the block filter, designers seemed to go crazy and think they could get away with anything downstream the filter. There are several areas where a workmanlike homebrewer can beat the mighty ICFTS1950DXSUPERPLUS into the ground without breaking into a sweat.

I don't think the Japanese went up converting to share designs with marine and SWL, I think they saw general coverage RX as the justifications. Most of their SWL RXs are quite different to their transceivers. I'm a cynic, I think that the proliferation of veriable IF BW in even cheap models is just an excuse to split the IF gain between different frequencies to avoid the need for more screening! and make it look like a feature.

If the chap had only said what his interest was, still, it's fun to display our opinions,
Cheers
David GM4ZNX

3670. Mini-Circuits Address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 11:49:21 UTC
From: michaela@freenet3.scri.fsu.edu
Message-ID: <3buuo1$ire@freenet3.scri.fsu.edu>
Source record: 115307

I am attempting to locate some stateside parts for a DX friend in Sweden.

Specifically, I am looking for a Minicircuits Model SBA-1 or Model ML-1 doubly balanced mixer module. I am told there are a number of outlets for the Minicircuits parts, I just need name and address, if available, please. Thanks. 73,

Michael Christie, K7RLS/4
Crawfordville, Florida

michaela@freenet.scri.fsu.edu

3671. Multipath Propagation

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 14:27:42 UTC
From: cbird@engr.mun.ca
Message-ID: <3bv80u$cit@coranto.ucs.mun.ca>
Source record: 115310

Hi Guys! I am currently doing an Engineering Master's Project on the problem of Multipath propogation from the ocean surface received by ship or rig mounted detectors. Any ideas on info, techniques, etc on this topic would be greatly benificial and appreciated.
Thanks!!

==========
COREY BIRD
Memorial University of Newfoundland
St. John's, NF
Canada
cbird@engr.mun.ca
==========

3672. Broadband 75/80 meter dipole antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 14:31:12 UTC
From: jdcolson@aplcomm.jhuapl.edu
Message-ID: <D0CDo0.1Gp@aplcenmp.apl.jhu.edu>
Source record: 115309

Over the years there have been articles for broadbanding 75/80 meter antennas. I am looking for references for same or even better comments on "real world" antennas.

Thanks for your assistance.

73, Jack, W3TMZ

3673. Re: Broadband 75/80 meter dipole antennas

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 17:45:04 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3bvjj0$7ap@hpscit.sc.hp.com>
Source record: 115311

In article <D0CDo0.1Gp@aplcenmp.apl.jhu.edu>,
Jack Colson <jdcolson@aplcomm.jhuapl.edu> wrote:
>Over the years there have been articles for broadbanding 75/80 meter
>antennas. I am looking for references for same or even better comments
>on "real world" antennas.
>
>Thanks for your assistance.
>
>73, Jack, W3TMZ

That subject was pretty much beat to death in QST Technical Correspondence
in the 1980's. Start looking in the yearly QST index for 1989 and then
1988, etc. till you find the most recent article. That article will give
you pointers to previous ones. You might also look at the 3 articles on
impedance transforming filters in 1964 and 1965 in IEEE Trans. MTT.
The theory really does work in practice if you know exactly what you are
doing, but if your knowledge of filters is limited to using filter tables,
you are probably going to have a lot of trouble. The things that commonly
get people into trouble are: not taking into account finite inductor Q,
not taking into account component tolerance, and not getting an accurate
antenna model.

Rick N6RK
rkarlqu@scd.hp.com

3674. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 19:42:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <19941205194245OSYSMAS@MVS.OAC.UCLA.EDU>
Source record: 115313

> Going to a low first IF (only IF?) like you mentioned has a variety
>of advantages. Xtal filters at lower frequencies are more linear. Local
>oscillators are on lower frequencies, so there is a phase noise
>advantage. Mixers are usually more linear due to switching speed
>effects.
>
> These advantages are real and powerful.
>
> The disadvantages are spurious responses and breaks in coverage. If
>DC-30MHz coverage is a "must", then you have no choice but to
>upconvert. If you just want some or all amateur bands, then you must
>decide whether the spurii in those amateur bands you want can be got to
>levels low enough for you to accept. Upconversion doesn't magically fix
>all spurious responses, it has its own, but which may prove easier to
>handle.

But.. Don't we have computer control now?

So if switching frequencies takes a complete path change (even
possibly changes the IF), it could still all happen based on a
single control change.

So why can't a down-converter have continuous coverage?

PS: Removing the spurious responses will take careful design and
good shielding. Also it will take good shielding to keep the
computer noise out of the radio...

3675. Valves anyone?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 21:40:32 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941206164510144@posnet.co.uk>
Source record: 115317

```
* This message forwarded from area 'BOFFINS' (BOFFINS)
* Original message dated 01 Dec 94, from Lee Davison

For sale or swap for WHY

5 as new QQV07/50 double anode valves. Suitable for 2m pa stages etc.
These are tested but never used spares.

Save these tubes from the bin - Reply today! 8^)=

Cheers,

--
__ /// Lee Davison :- Sysop
\\X// The Unseen University
~~~

--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)
```

3676. ### LOOKING FOR PART : TCM3105 IC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-05 21:59:44 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941206164510145@posnet.co.uk>
Source record: 115218

In a message of 30 Nov 94 Teh Aik Wen wrote to All:

TAW> I'm trying to put together a simple packet modem for VHF use, and I
TAW> seem to have problem locating this IC locally:
TAW>
TAW> TCM3105
TAW>
TAW> It's a 'single chip FSK modem' and is manufacturered by Texas
TAW> Instruments. It comes in a 16 pin DIL package if I'm not mistaken
TAW> (TCM3105N)
TAW>
TAW> Can someone let me know where I can find this part number, and how
TAW> much should I expect to pay for it if I'm getting it in small
TAW> quanitites (Perhaps 2-3 pieces?) ^^^

Hello Teh

Someone else building the Baycom packet modem!!! In the Uk you can get
these ICs from:

RS Components, PO Box 99, Corby, Northants. Telephone UK + 536 201234
Telex: 342512
Fax: UK + 536 405678

RS Components' parts are available through distributors in many countries
but I'm sorry I don't have a Singapore address. The cost of the chip is
about UK pounds 8 each and the catalogue part number is TCM3015 638-380

Let me know if you have difficulty, perhaps I can post one to you?

Regards Paul. G4DCV

--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3677. Steinbrecher at Wireless Exhibition

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 10:15:11 UTC
From: kevin.jessup@mail.mei.com
Message-ID: <kevin.jessup.172.003A33E8@mail.mei.com>
Source record: 115315
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew

Still trying to get my boss to feel this is important enough for
him to pay for the course, air, and lodging. That project I'm
on now isn't NEARLY as important as this!! ;-))

Anyone else going?

Wireless Symposium/Exhibition
February 15,16,17 1995
Santa Clara Convention Center
Santa Clara, California

Worskshop 4, Tuesday, Feb 14,1995, 8:30AM to 12:00PM
DIGITAL RECEIVERS and DSP $150.00
By: Dr. Donald Steinbrecher and Professor Fred Harris
"This halfday tutorial workshop will explore the performance limits
of systems designed to convert RF signals to the digital realm and
explain how to digitally process these signals for maximum effectiveness
in wireless communications. ...will explain how to achieve maximum
dynamic range and sensitivity in the RF-to-digital portions of a digital
receiver and how to apply DSP techniques for optimal channelizing
and demodulation of multiple communications channels."

Woskshop 5, Tuesday, Feb 14,1995, 2:30PM to 5:30PM
SPREAD SPECTRUM $150.00
by: Dr. Jack Holtzman
"...will cover the basic theories behind frequency-hopped and direct-
sequence systems and how to implement spread-spectrum systems
for maximum performance. This lively course will also highlight the
important aspects of CDMA and wireless LANS."

Any other hams involved in the field planning on attending either
of these??

P A R A D I S E * *
TAR & ASPHALT * * * *
* *)
__ *) (
|| _____ || kevin.jessup@mail.mei.com (
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|| _ |******|______|*n9sqb|))

```
_\/ \_-- \___ ****__________****_________________________________________
"Paving paradise and putting up parking lots."
```

3678. Regenerative Detectors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 12:27:16 UTC
From: gsymonds@hpb.hwc.ca
Message-ID: <3c1lb4$r4v@m.ehd.hwc.ca>
Source record: 115314

Has anyone had any experience in designing regenerative detectors? I am particularly interested in the virtue of sharp vs remote cutoff pentodes in this application.

Thanks for any help, please reply by e-mail.

Gordon Symonds

3679. Re: Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 15:37:23 UTC
From: zlau@arrl.org
Message-ID: <1994Dec6.153723.32090@arrl.org>
Source record: 115222

KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <3bj4sm$kfr@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
: >
: >Excuse the topic drift, but I would like to make a (frankly opinioned) statement
: >about receiver architecture. Where is it written that for a ham band
: >only receiver, you have to upconvert to VHF to get good image rejection?
: >If I were going to build a homebrew receiver, I would pick a low IF in
: >between ham bands like 5 MHz. and convert directly to it. Nine separate
: >ham band filters would do preselection and take care of image rejection.
: >In fact, you could make the first mixer an image reject mixer and relieve
: >some of the image filtering difficulty. I would much rather build 9
: >filters than fool with a VHF IF. Yes, if you are a manufacturer, you

I don't consider image rejection a problem, particularly if you are willing
to build narrowband, fixed tuned filters. Actually, I don't find image
rejection to be a problem with my 9 MHz IF 222 MHz transceiver--66 dB
image rejection just from the image stripping BPF.

: Image rejection is only part of the problem. With a 5 MHz first IF,
: 160 and 80 will tune backwards with respect to the other bands, and

Wrong: Either a 3.2 to 3.0 or a 6.8 to 7.0 MHz VFO ought to tune
160 meters correctly.

: sidebands will be reversed. The 3rd harmonic of the 40 meter LO will
: present difficult in band products. The 10 MHz band will have a nasty
: problem with an in band LO signal. Etc. Birdies, birdies, birdies.
: With an upconverted first IF, nearly all these problems can be avoided.

Or replaced with new ones :-). Its tough to make accurate generalities,
but what usually happens is you replace a few really bad spurs/birdies
with a lot of much weaker ones. One interesting solution might be to
switch between two IFs, if you are using relatively inexpensive crystal
filters.

: Since the first IF need only consist of a roofing filter, which can be
: a simple helical design, a SBL-1, a MAR-4, another SBL-1 and a 51 MHz
: crystal second LO, and another MAR-4 as a post amp, to get you down to

Why use a MAR-4? It generates almost as much noise as it has gain.
6.5 dB NF, 8.5 dB gain. This approach seems pretty noisy to me--over
20 dB NF (two mixers, two filters, and two noisy post amplifiers)

Unless the helical filter is as sharp as the crystal filter, you
get a degraded dynamic range from signals that get past the roofing
filter.

: a traditional 9 MHz 2nd IF strip, that part's pretty trivial. Using a
: 60 to 90 MHz VCO will give you continous tuning of the HF spectrum with
: no birdies, backward tuning, or image problems. The VCO can be easily
: controlled with a PLL synthesizer, or made as an actual mechanically
: tuned VFO with reasonable stability with today's components. Simply

I doubt this. 50 Hz/90 MHz=0.56 ppm What kind of VFO parts are you
suggesting? Who makes them?

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3680. Re: Antique Console Rebuild Questions

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 16:54:57 UTC
From: kendelm@QueensU.CA
Message-ID: <3c2511$q89@news.CCIT.Arizona.EDU>
Source record: 115316

Speaker fabric is available many places. The local auto upholstery
fabric shop a couple of blocks from my house has quite a selection.
If you can't find anything locally, call Antique Electronic Supply
in Scottsdale, AZ (get number from information operator).

3681. Amigas and ham radio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 18:11:34 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941207050011149@posnet.co.uk>
Source record: 115225

Are there any Amiga using radio hams out there?

In the UK there's a support group- The AARUG = Amiga Amateur Radio User Group. Although the group is primarily UK based there are members from many other countries. There's an occasional newsletter posted out to members and the group maintains a PD library. Membership is several hundred strong.

Membership is FREE, you just need to register your name and address and leave some stamped, self-addressed envelopes (or an envelope with an IRC for non-UK membership). The PD library operates in just the same way, you send a blank floppy disk and return postage and it's sent back with the programs ou want.

For the sake of non Amiga owners I won't clog up the echo with more information right here. Netmail me for further details.

If anyone has any Amiga PD or Shareware for amateur radio then PLEASE let me have a list so we can consider adding it to the group library.

73 de Paul G4DCV.

AmigaBee BBS 2:254/214 Tel UK+ 71 695 5328 * Amiga Ham radio file area *
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3682. schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 21:10:02 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941207050011150@posnet.co.uk>
Source record: 115226

In a message of 04 Dec 94 Teh Aik Wen wrote to All:

TAW> In article <94120116450665@posnet.co.uk>, Paul Whatton
TAW> <paul.whatton@posnet.co.uk> wrote:

>> JL> Does anyone know where i can ftp (or otherwise) schematics/docs/etc..
>> JL> for a simple 1200bps TNC for use on 2 Metres?

PW>> Hello James. Look around for a file caled BAYCOM. This is a simple
PW>> TNC using a modem chip and few other components. Almost all the packet
>> radio s/w will drive it OK and most make reference to it in their docs.

TAW> I believe these critters are called a "Packet Modem" and not a TNC. I'm
TAW> trying to build one myself, by have trouble finding the TCM3105
TAW> locally, will be trying to mail order them from the US though...

TAW> Rgds!

Hello Teh

Interesting to see myself quoted especially since I only sent you a reply
last night and I'm using a FidoNet to Internet gateway. Then I realised you
were quoting me on a different article (g)

By the time you see this you should see the reply I've sent you about where
to get the TCM3015. Hope it's useful.

By the way, what's your callsign. I haven't had a QSO with Singapore for
years!

73 de Paul G4DCV

... AmigaBee BBS 2:254/214 Tel 071 695 5328 * Amiga Ham radio file area *
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3683. Re: Mini-Circuits Address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 21:21:55 UTC
From: shane@mdd.comm.mot.com
Message-ID: <3c2klj$gbo@daffyduck.mdd.comm.mot.com>
Source record: 115219

In article <3buuo1$ire@freenet3.scri.fsu.edu>,
Michael Christie <michaela@freenet3.scri.fsu.edu> wrote:
>I am attempting to locate some stateside parts for a DX friend in
>Sweden.
>
>Specifically, I am looking for a Minicircuits Model SBA-1 or Model
>ML-1 doubly balanced mixer module. I am told there are a number of
>outlets for the Minicircuits parts, I just need name and address, if
>available, please. Thanks. 73,

From the Mini-Circuits catalog:

SWEDEN
INTEGRERAD ELECTRONIK
S-161 11 Bromma, Sweden
46 8 80 4685

NORTH AMERICA
P.O. Box 350166
Brooklyn, NY 11235-0003
800 654 7949

73s
Hugh N7UAX
shane@mdd.comm.mot.com

3684. Re: Good Crystal Source

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 21:29:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.353.546@acenet.com>
Source record: 115227

Newsgroups: rec.radio.amateur.homebrew

JT> A few of us build 1 and 2 tube 6L6 tranmsitters and are always looking
JT>for something fundamental around 3-4mHz. I'm working on a push-pull 6L6
JT>transmitter for high end of AM BC band 1100KHz or neighborhood. You got
JT>anything that might work. I'll gladly buy it.

Joe, why not use a pair of 3-500Z or 4-400 tubes as an afterburner. That
way when the FCC Engineer comes to investigate your illegal pirate
AM station he will have something really exciting to do when he arrests
you? :-)

• SLMR 2.1a • I tried to contain myself but I escaped!

3685. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 21:35:31 UTC
From: kirkland@bgtys22.bnr.ca
Message-ID: <3c2lf3$iin@bmerha64.bnr.ca>
Source record: 115221

Regarding my original post which seems to have sparked much controversy,
I am interested in building a crystal filter in the 45 to 70 MHz. Recently
I have found that some companies offer crystals in the fundemental mode
in this frequency range, but at what cost I don't know? I am interested
in building my own filters as finding filters in this frequency range in
small quantities at reasonable prices is difficult. I have noticed that
there is a KVG filter available in the 40 MHz range but it was priced at
$199 which seems a little steep.

I am interested in building a high performance system hence I am interested
in playing with the ideas and designs expressed by Rhode and others as well.

The basic receiver structure that I am using is based on the high performance
transceiver described at the end of the book "Radio Frequency Design for the
Radio Amateur". This is a single conversion system using a 9 MHz IF and I
have replaced the MC1590G with MC1350Ps. This seems to serve as a good starting
block on which to experment with receiver designs. Right now I have a
100 MHz analog devices DDS board that I can use as the LO and cover all of the
ham bands but I plan to experiment with up-conversion and hence will be designing
a DDS driven PLL.

Bill Kirkland
VE3JHU

3686. temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 22:00:56 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <3c2muo$338p@yuma.ACNS.ColoState.EDU>
Source record: 115220

I'm looking for a way to make a small dummy load to test out my qrp rig
it's fourty meter and puts out(supposed to put out) 1.5 wats.
Thanks Robert
KB0PED

P.S. Radio shack hear no longer sells there dummy load.

3687. Re: Drake T4XB+ HQ170AC-VHF. Keep or Dump?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 23:06:39 UTC
From: Wes Ague <Wes.Ague@NapervilleIL.ncr.com>
Message-ID: <D0Ew74.5ns@ncrcae.ColumbiaSC.NCR.COM>
Source record: 115228
Cross-posted to: rec.radio.swap,rec.radio.shortwave,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amate

Joe@interramp.com wrote

>Get some tuner cleaner at RAdio
>Shack and blast all the variable capacitors and potentiometers'; that will
>clean out a lot of the problems.

Be careful about doing this. This cleaner typically contains silicon as a
lubricant and
can cause more harm than good if it inadvertanetly gets on some components.
I had some personal experiences with circuits being detuned and once had a
crystal quit working. I don't understand how it affected the components, but
a there was some speculation among some EE friends here at the Labs that the
silicon was probably to blame. You are probably better off using a
non-lubricating
cleaner.

Wes Ague - K9UN

3688. Re: Need: 75 - 100pf Variable Capacitor

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-06 23:29:51 UTC
From: chuckb@tc.fluke.COM
Message-ID: <D0Ex9w.89K@tc.fluke.COM>
Source record: 115223

> Does anyone know where I could find a 75pf-100pf variable
> capacitor. I am having a great deal of trouble locating one in
> this range.

Why don't you solder a 70 pF mica capacitor across the terminals of a
0- 25 pF variable?

--
Chuck Bowden / WB7R / chuckb@tc.fluke.com / (206) 356-6228
Fluke Corporation / MS 232E / PO Box 9090 / Everett WA 98206-9090

3689. Re: Need Help with old Motorola

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 00:07:31 UTC
From: jdevenport@lanl.gov
Message-ID: <3c2uc3$aul@newshost.lanl.gov>
Source record: 115233

In article <3btdvj$2d5@er5.rutgers.edu>, hanebuth@eden.rutgers.edu (Chief Stuart Hanebuth) says:
>
>I have an old MoCom-70 Mobil Radio (MOD# U44BBN3110A) c. 1975
>
>Here is what I need help with:
>Owners and or Service Manuals
You can plug HC-6 style crystals directly into the 2 holes that normally accept the channel element. The other holes are for thermistor etc connections and the radio will work fine if your ambient temperatures don't swing too far. I have service manuals on these things but am not willing to part with them, try your local 2 way radio shop if any are close by or look up the closest Motorola 2-way communications dealer, they may be able to order a microfiche manual for you and/or make copies.
Jim Devenport WB5AOX

3690. Re: Mini-Circuits Address?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 00:13:08 UTC
From: jdevenport@lanl.gov
Message-ID: <3c2umk$aul@newshost.lanl.gov>
Source record: 115232

In article <3buuo1$ire@freenet3.scri.fsu.edu>, michaela@freenet3.scri.fsu.edu (Michael Christie) says:
>
>I am attempting to locate some stateside parts for a DX friend in
>Sweden.
>
>Specifically, I am looking for a Minicircuits Model SBA-1 or Model
>ML-1 doubly balanced mixer module. I am told there are a number of
>outlets for the Minicircuits parts, I just need name and address, if
>available, please. Thanks. 73,

Mini-Circuits Inc.
INTEGRERAD ELECTRONIK
S-161 11 Bromma, Sweden
46 8 80 4685

USA
PO Box 350166
Brooklyn NY 11235-0003
(800) 654-7949
(417) 335-5935
FAX: (417) 335-5945

Jim Devenport WB5AOX

3691. Re: schematic for simple tnc?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 00:17:45 UTC
From: jdevenport@lanl.gov
Message-ID: <3c2uv9$aul@newshost.lanl.gov>
Source record: 115234

In article <3bs0r0$dll@nova.np.ac.sg>, s2202629@np.ac.sg (Teh Aik Wen) says:
>
>In article <94120116450665@posnet.co.uk>,
>Paul Whatton <paul.whatton@posnet.co.uk> wrote:

>I believe these critters are called a "Packet Modem" and not a TNC.
>I'm trying to build one myself, by have trouble finding the TCM3105 locally,
>will be trying to mail order them from the US though...
>
>Rgds!

I never could find a dist selling the TCM3105. I built and sold BAYCOM/
Digicom modems using the more available XR2211 and XR2206 chips for years
and still have a good supply of circuit boards and associated parts including
IC's needed. Unfortunately this circuit requires either a frequency
counter to align properly or looooooots of patience.
Jim Devenport WB5AOX
DEVCOM
PO Box 445
McIntosh NM 87032
505-832-1462
jdevenport@lanl.gov

3692. Re: headset with microphone needed for phone

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 04:39:47 UTC
From: geret@gov.nt.ca
Message-ID: <1994Dec7.043947.29470@gov.nt.ca>
Source record: 115224
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <786533566snz@microvst.demon.co.uk> tgold@microvst.demon.co.uk writes:
>In article <3bonaa$2ca@www.interramp.com> Joe@interramp.com writes:
>
>> STEVE: The top-of-the-line headset-mikes generally available on the amateur
>>
>> market are the Heil headset-mikes. But, they cost a good bit more than the
>>
>> Radio Shack $55. The most expensive Heil has paded dual-earpiece headset with
>>
>
>I thought many professionals use Plantronics. Anyone know sources?
>
>--
>
>Tony - G3SKR / AA2PM / tgold@microvst.demon.co.uk

u are obviously unaware that the headphones that come as part of the Heil
BM-10 are from Radio Shack. I can vouch for Heil's mic elements, but I
am less than impressed with the headphones. Wouldn't be so bad if Bob (Heil)
would include this information in his ads.

Larry Horlick
VE8HL
geret@inukshuk.gov.nt.ca
:wq

3693. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 13:37:02 UTC
From: jwl@walter
Message-ID: <1994Dec7.073702.15146@walter.cray.com>
Source record: 115251

Robert Taylor (greendot@lamar.ColoState.EDU) wrote:
: I'm looking for a way to make a small dummy load to test out my qrp rig
: it's fourty meter and puts out(supposed to put out) 1.5 wats.
: Thanks Robert
: KB0PED

: P.S. Radio shack hear no longer sells there dummy load.

I'd try a couple of 100 ohm, 1 watt resistors in parallel. If you can't find 1 watt resistors, try 1/2 watt, but don't transmit for long periods of time. Alternately you could take 4 47 ohm resistors, wired 2 sets of resistors in series parallel with each other. Use 1/2 watt resistors and you won't have any problem.

Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3694. RE: Dummy Load

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 14:15:00 UTC
From: MUENZLERK@uthscsa.EDU
Message-ID: <01HKCSVHHFG200BBAI@uthscsa.edu>
Source record: 115229

>
> I'm looking for a way to make a small dummy load to test out my qrp rig
> it's fourty meter and puts out(supposed to put out) 1.5 wats.
> Thanks Robert
> KB0PED
>
> P.S. Radio shack hear no longer sells there dummy load.

All you need is four 2 watt 50ohm carbon resistors. Just arrange
them in two sets of two series and then place those in parallel.

ex.

```
50 50
___|-----/\/\/\--/\/\/\----|____
|-----/\/\/\--/\/\/\----|
50 50
```

This will give you two 100 ohm in parallel -- 50 ohm 4 watts
which is just about what you need.

DON'T USE THE RADIO SHACK 100 OHM WIREWOUND. I think they still sell
50ohm non-inductive resistors.

73

Kevin

Legal stuff:
The above opinions are my own and not necessarily those of the staff,
faculty, administration, or lab animals (woof!) of The University of
Texas Health Science Center at San Antonio or anyone else who is not
me. Your mileage may vary. Batteries not included.
****
Kevin R. Muenzler, WB5RUE The University of Texas Health
muenzlerk@uthscsa.edu Science Center at San Antonio,
Department of Computing Resources

Liberals measure compassion by how many people they are helping.
Conservatives measure compassion by how many people no longer need
their help.
--Jack Kemp

The difference between genius and | I am Voltohm of Borg!
stupidity is that genius has its | Resistance is E/I!
limits. | Power is EI!
****

3695. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 16:13:44 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec7.161344.5360@ke4zv.atl.ga.us>
Source record: 115240

In article <3c2muo$338p@yuma.ACNS.ColoState.EDU> greendot@lamar.ColoState.EDU (Robert Taylor) writes:
> I'm looking for a way to make a small dummy load to test out my qrp rig
> it's fourty meter and puts out(supposed to put out) 1.5 wats.

Get 4 200 ohm 1/2 watt *carbon* resistors and parallel them in a bundle with short leads. Install that bundle in a coax connector, one lead bundle to the center pin, the other to the shield. Keep the leads as short as feasible. This will make a good 2 watt dummy load at 40 meters.

Larger wattage resistors in this range are usually wirewound. That would be inductive, so you use the paralleled carbon resistors instead to give you a good non-reactive termination.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3696. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 16:32:45 UTC
From: stv@world.std.com
Message-ID: <D0G8ML.E6E@world.std.com>
Source record: 115230

Robert Taylor (greendot@lamar.ColoState.EDU) wrote:
: I'm looking for a way to make a small dummy load to test out my qrp rig
: it's fourty meter and puts out(supposed to put out) 1.5 wats.

Robert,
I use four 200 ohm two watt resistors in parallel. Plenty of capacity
for my NE40-40, I also adjusted my power out to exactly 1.5w with a scope
accross this load, a lot more accurate unless you have a well calibrated
qrp wattmeter.

72 es 73
Steve
KC7FII

--
Steve Pitts KC7FII, stv@world.std.com

3697. Re: Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 16:36:16 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec7.163616.5466@ke4zv.atl.ga.us>
Source record: 115241

In article <1994Dec6.153723.32090@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: Since the first IF need only consist of a roofing filter, which can be
>: a simple helical design, a SBL-1, a MAR-4, another SBL-1 and a 51 MHz
>: crystal second LO, and another MAR-4 as a post amp, to get you down to
>
>Why use a MAR-4? It generates almost as much noise as it has gain.
>6.5 dB NF, 8.5 dB gain. This approach seems pretty noisy to me--over
>20 dB NF (two mixers, two filters, and two noisy post amplifiers)

A MMIC offers a broadband termination to the mixer, thus getting rid
of some potential intermod problems. I like the MAR-4 because it has
a relatively high intercept. This *is* a HF receiver, weak signal
performance isn't nearly as important as handling the strong signals
likely to be present at the antenna. There are other MMICs that may
be more suitable if you're in a very quiet location.

>Unless the helical filter is as sharp as the crystal filter, you
>get a degraded dynamic range from signals that get past the roofing
>filter.

I *did* mention you might want switched bandpass preselector filters,
the roofing filter is just to chop the VHF image, and preamps too if
you're concerned about ultimate sensitivity. I really don't think
sensitivity would be that much of an issue below 10 meters however.
The atmosphere, and manmade sources, generate plenty of noise to
mask the receiver noise floor.

>: a traditional 9 MHz 2nd IF strip, that part's pretty trivial. Using a
>: 60 to 90 MHz VCO will give you continous tuning of the HF spectrum with
>: no birdies, backward tuning, or image problems. The VCO can be easily
>: controlled with a PLL synthesizer, or made as an actual mechanically
>: tuned VFO with reasonable stability with today's components. Simply
>
>I doubt this. 50 Hz/90 MHz=0.56 ppm What kind of VFO parts are you
>suggesting? Who makes them?

I'd suggest the Vacker circuit shown on page 60 of the current
Communications Quarterly (Fall 94). The author claims sufficient
stability for a SSB transmitter using the mixing scheme I've been
proposing. Rhode uses ceramic resonator oscillators in the design
he presented. Those would probably work too, but the cheaper unit
I referenced should do. I'm more inclined to use a synthesizer
stabilized VCO, but if analog tuning is important, then there are
apparently circuits that will work.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3698. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 17:55:15 UTC
From: kenkd1xs@aol.com
Message-ID: <3c4su3$mo0@newsbf01.news.aol.com>
Source record: 115231

In article <3c2muo$338p@yuma.ACNS.ColoState.EDU>,
greendot@lamar.ColoState.EDU (Robert Taylor) writes:

> I'm looking for a way to make a small dummy load to test out my qrp rig
> it's fourty meter and puts out(supposed to put out) 1.5 wats.

Pick up a 50 ohm 5W or 10W resistor from RS or other supplier. I soldered
one to a 6"piece of coax and connected to a PL-259. Work great for QRP.

Ken KD1XS

3699. Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 19:17:16 UTC
From: Waltk@pica.army.mil
Message-ID: <9412071417.aa23255@COR5.PICA.ARMY.MIL>
Source record: 115235

Howdy!

Recently, I noticed the toroidal inductor of my homebrew amplifier
was getting hot and power output was dropping after long periods
of calling CQ Contest on CW running, 1200W output.

The toroidal inductor is a stack of 3 cores of T-225A (2.25" OD),
u=10 (Red, mix=2). The cores are stacked and wrapped with Scotch
(67) fiberglass tape. The wire used is 12 guage Thermoleze wire. About
20 turns produce about 10 uHy. This forms part of the 80M, and most
of the 160M inductance.

I just got off the phone with the applications engineer at Micro Metals,
the supplier for Amidon and other purveyors of toroid material for
the ham homebrewer. He suggests the use of Litz Wire as a substitute
for copper wire in the construction of high power toroidal inductors
at RF. After a bit of figuring he concluded that the core is not
the source of the heat and subsequent loss of power, but in all
probability its the type of wire used. Using the above core material,
he computed the temperature rise of the core to be about 10 deg. C above
ambient. Thus, he concludes its the wire that is causing the problem.
As the temprerature of the wire rises, so to does the loss thru the wire.
Its a situation that compounds after time, getting worse and worse.

What is Litz wire, what shapes, and sizes should one use when
constructing an HF amplifier, more specifically at 1.8 Mhz. I notice
Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
I guess these are the guage and the number of strands in each wire.
What size does this correspond to, that I may be familiar with?
Are there other suppliers, and how does one properly size the wire
for the application. Can the above sizes accomodate my application.

There is a possibility the loss is caused by circulating currents.
If this is the case, how does one minimize circulating currents
in a Pi Network?

Your help in this matter would be greatly appreciated.

73 de Walt - K2WK

.....
73 de Walt Kornienko - K2WK Internet: waltk@pica.army.mil
DX PacketCluster: K2WK > W3MM Packet: K2WK@N2ERH.NJ.USA.NOAM

3700. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 20:33:21 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.786832401@aries>
Source record: 115236

Waltk@pica.army.mil writes:

>Howdy!

>Recently, I noticed the toroidal inductor of my homebrew amplifier
>was getting hot and power output was dropping after long periods
>of calling CQ Contest on CW running, 1200W output.

>The toroidal inductor is a stack of 3 cores of T-225A (2.25" OD),
>u=10 (Red, mix=2). The cores are stacked and wrapped with Scotch
>(67) fiberglass tape. The wire used is 12 guage Thermoleze wire. About
>20 turns produce about 10 uHy. This forms part of the 80M, and most
>of the 160M inductance.

>I just got off the phone with the applications engineer at Micro Metals,
>the supplier for Amidon and other purveyors of toroid material for
>the ham homebrewer. He suggests the use of Litz Wire as a substitute
>for copper wire in the construction of high power toroidal inductors
>at RF. After a bit of figuring he concluded that the core is not
>the source of the heat and subsequent loss of power, but in all
>probability its the type of wire used. Using the above core material,
>he computed the temperature rise of the core to be about 10 deg. C above
>ambient. Thus, he concludes its the wire that is causing the problem.
>As the temprerature of the wire rises, so to does the loss thru the wire.
>Its a situation that compounds after time, getting worse and worse.

>What is Litz wire, what shapes, and sizes should one use when
>constructing an HF amplifier, more specifically at 1.8 Mhz. I notice
>Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
>I guess these are the guage and the number of strands in each wire.
>What size does this correspond to, that I may be familiar with?
>Are there other suppliers, and how does one properly size the wire
>for the application. Can the above sizes accomodate my application.

I understand that litz wire is useful for raising the Q of the coil for
freq's up to abt the hundreds of kilohertz. A silver plated #12 seems
to be what the linear makers use.

>There is a possibility the loss is caused by circulating currents.
>If this is the case, how does one minimize circulating currents
>in a Pi Network?

The circulating currents are due to a high loaded Q. Reduce the C and
increase the L in the ckt. See the latest ARRL handbook for Q calculations
(1994 or later has the corrected formulae).

>Your help in this matter would be greatly appreciated.

>73 de Walt - K2WK

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

3701. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 20:41:55 UTC
From: jstroppe@franklin.uhl.uiowa.edu
Message-ID: <3c56mj$6ld@nexus.uiowa.edu>
Source record: 115238

What ever happened to the #1847 dial lamp dummy load ? John WA0VYZ

3702. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 20:55:57 UTC
From: alanb@sr.hp.com
Message-ID: <3c57gt$gfh@canyon.sr.hp.com>
Source record: 115237

Waltk@pica.army.mil wrote:

: Recently, I noticed the toroidal inductor of my homebrew amplifier
: was getting hot ...

: The toroidal inductor is a stack of 3 cores of T-225A (2.25" OD),
: u=10 (Red, mix=2). The cores are stacked and wrapped with Scotch
: (67) fiberglass tape. The wire used is 12 guage Thermoleze wire. ...

: I just got off the phone with the applications engineer at Micro Metals,
: the supplier for Amidon and other purveyors of toroid material for
: the ham homebrewer. He suggests the use of Litz Wire as a substitute
: for copper wire in the construction of high power toroidal inductors
: at RF. ...

The same problem occurs in the toroids used in high-frequency switching power supplies. As I understand it, here's what is going on:

We all know about skin effect. It causes the RF current to flow on the surface of the wire, increasing the effective RF resistance. In addition, when you wrap a number of turns in close proximity, you get less current where the wires are close together, further constricting the current flow and further increasing the RF resistance. That's why high-Q coils are space-wound, so the wires are not too close together.

: What is Litz wire, ...

Litz wire is stranded wire where each strand is insulated from the others. It provides more surface area than solid (or uninsulated stranded) wire, so has less RF resistance.

: what shapes, and sizes should one use when
: constructing an HF amplifier, more specifically at 1.8 Mhz. I notice
: Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
: I guess these are the guage and the number of strands in each wire.

That would be my guess. I would try the #10, since that is closest to the guage it replaces in your current amplifier.

: There is a possibility the loss is caused by circulating currents.
: If this is the case, how does one minimize circulating currents
: in a Pi Network?

You use a lower loaded Q. Loss equals loaded Q divided by unloaded Q. (Unloaded Q is the Q of the inductor by itself, i.e. it includes coil losses only. Loaded Q included the losses of the network in which the tuned circuit is located.)

In a pi-network, you get lower loaded Q by using a larger inductor and smaller tuning capacitance.

AL N1AL

3703. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 22:08:38 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3c5bp6$mf3@hpscit.sc.hp.com>
Source record: 115239

In article <3c57gt$gfh@canyon.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
>
>: Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
>: I guess these are the guage and the number of strands in each wire.
>
>That would be my guess. I would try the #10, since that is closest to
>the guage it replaces in your current amplifier.
>
>AL N1AL

Are you sure? I thought "10/44" means ten strands of #44 wire (which
would result in an effective gauge of #33), not 2500 stands of #44 wire
(which would result in an effective gauge of #10).

Rick N6RK
rkarlqu@scd.hp.com

3704. Re: how much heat can diod take?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 22:09:13 UTC
From: zlau@arrl.org
Message-ID: <1994Dec7.220913.29378@arrl.org>
Source record: 115245

Robert Taylor (greendot@lamar.ColoState.EDU) wrote:
: I recently put a kit together a 40 meter and the designer said it
: was important to keep all parts as close to the board as possible.
: So it was nearly impossible to heat sink the diods and transistors.

I take it you wanted to heat sink the parts to protect them from
the soldering operation. I think old books talking about soldering
to terminal strips and tube sockets recommended this.

With printed circuit boards, don't even bother. You want to
solder the joint as quickly as possible, and fussing around with
a heat sink isn't going to help the process. Ideally, a 650 to
700 degree temperature controlled 40 to 60 watt iron works well.

Or, you can learn how long it takes your soldering iron to heat
up (between soldering connections) for best results. Solder the
resistors first and learn. Never let your (non temperature controlled)
iron sit there for an hour and then solder to a circuit board--it will
probably get hot enough to lift a trace (delaminate the board).

Are circuit boards really that different? Yes--you are soldering
to a thin piece of metal on a pretty good thermal insulator (fiberglass).
Thus, the circuit board foils heat up really fast, especially compared
to a solder lug attached to a metal chassis. If you work quickly
enough, the internal connections inside the diodes and transistors
won't have time to get hot enough to be damaged.

: They were all fairly basic zeners and the trans were mostly 2n222s.
: I ran into a new piece called a polystyrene cap and the docs said to
: be extra carefull about getting them to hot, so i fudged and picked
: them up enough to heat sink them. In general how close to the board

Depends on the parts. Most parts are mounted right up against the
board. You might get some copies of QST and look at the photographs.
I wouldn't bother resoldering the capacitors, however. It will probably
work just fine. At 40 meters an extra 1/16 inch usually won't affect
performance. But, there are stories of people using the *full* lead
lengths!
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3705. FYI: Modify 6LQ6-based HF amp for cheaper tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 22:09:40 UTC
From: dgf@netcom.com
Message-ID: <dgfD0Go84.1rM@netcom.com>
Source record: 115242

I have an old Dentron GLA-1000B HF amplifier (80-10M, about 600W out) that uses four 6LQ6 tubes. The tubes are very expensive and hard to find nowadays. I discovered the tubes were all in different condition, two of the four being really dead (one tube had zero emission, even tho the filament lit, a condition I still haven't been able to fathom).

I received a flyer from Antique Electronic Supply offering a sale price on 31LQ6 tubes, $4.50 each. The tubes I received are "ECG" brand, altho they don't have a brand logo on the tube envelope itself. They are packaged in white non-logo boxes, but are new. I substituted four of these tubes for the 6LQ6's originally in the Dentron, and rewired the filaments for series operation, using the 117VAC mains in series with the 6.3VAC filament winding, giving me about 124VAC. This makes the filaments "hot" with respect to the AC mains, although the only side-effect of the change was some RF getting back into the AC mains, which I cured with some bypass capacitors (the filament-to-heater capacitance is a few pF, so there is a non-zero amount of coupling that would normally be absorbed by the filament transformer inductance).

I think this kind of mod would work with other similar amps using the 6LQ6, and might offer an alternative to get the amps back on the air at lower cost. I think the Antique Electronic Supply sale goes on thru the end of the year.

If you do this mod, label the amp's internals carefully, so some future unsuspecting owner doesn't blow up a set of 6LQ6's!!! Also, recheck your wiring carefully before plugging in the tubes, so you don't cook some of your 31LQ6's. Finally, if you run your amp from 220V (as I do), you can get 117V easily from half the transformer primary winding (the transformer has two primary windings, in series for 220V operation). Again, don't presume that a subsequent owner wouldn't change the primary wiring, so do the mod with care (as to where you grab the 117V).

Their phone # is 602 820 5411 and they are in Tempe AZ. I am posting this for info only, and I have no relationship with AES other than as a customer.

73 Dave WB0GAZ dgf@netcom.com

3706. PARTS & KITS (1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 23:19:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.360.546@acenet.com>
Source record: 115246

From: brian.carling@netcom.com

Names and addresses of companies that supply parts and kits for
amateur radio construction: (Updated 07 December, 1994)

Here it is folks, the incredible new MEGA-LIST! From AF4K

"624 Kits" No phone listed
171 Springlake Drive
Spartanburg, SC 29302 (QRP kits & accessories)

A & A Engineering (714) 952-2114
2521 W. La Palma #K Stas Andrzejewski, W6UCM (Keyer,
Anaheim, CA 92801 Battery charger, SELCALL, freq synth kits etc.)

A.B.C Electronics 800-562-6503 206-364-8300
1750 15th N.E. Only New Icom Ham Radio on special order. No stock
Seattle Wa 98155 Towers, Antenna's, Coax and Coax fittings.In stock

Active Electronics (800) 677-8899 FAX: (514) 697-8112
11 Cummings Park (INT.) (514) 630-7410
Woburn, MA 01801 New electronic parts

ADI Co. (800) 233-6261
180 Michael Drive
Syosset, NY 11791 Power supplies, batteries etc.

Charles P. Adkins N8QXP 1821 La Blanc. Lincoln Park,MI 48146
(313) 382-0272 Tubes

Advanced Computer Products Inc. (800) FONE-ACP FAX: (714) 558-8849
1310 E. Edinger (714) 558-8813 Voice Sales
Santa Ana, CA 92705 Chips, semiconductors

Alfa Electronics (800) 526-ALFA FAX: (609) 275-9536
P.O. Box 8089 (609) 275-0220
Princeton, NJ 08543 Multimeters etc. Free catalog

All Electronics (800) 826-5432 (orders) FAX: (818) 781-2653
P.O. Box 567 Voice: (818) 904-0524 INFO
Van Nuys, CA 91408 Misc. surplus parts etc. catalog

Allied Electronics: 1-800-433-5700 Located in 37 states, 79 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes.

Alltronics: Main. (408) 943-9773: FAX (408)943-9776: BBS(408)943-0622
2300 Zanker Road Excellent Tube selection at reasonable prices

San Jose, CA 95131 Main Store. Components, grab bags etc. Min $15

Alltronics: Branch Store. (702) 897-7237
6283 S. Industrial Ave. Components, grab bags etc.
Las Vegas Nv.89118

Alltronics: Branch Store. (801) 485-5117
2888 S. Main St. Components, grab bags etc.
Salt Lake City, Ut. 84115

Almac Electronics 800-426-1410
Seattle Wa Solid-state componets

American Science and Surplus (formerly JerryCo)
P.O. Box 48838 (708) 475-8440 FAX: (708) 864-1589
Niles IL 60714-0838 ### New address.
Surplus. *The* surplus place. Lots and lots of surplus.
You name it, they have it. Catalogs are really good.
$12.50 minimum order (which includes the $4 shipping charge).

Amidon Associates (213) 763-5770
12033 Otsego Street
North Hollywood, CA 91607 (toroid cores, ferrite beads etc.)

Antennas West (800) 926-7373
Box 50062S
Provo, UT 84605 Wide variety of antenna kits, loops etc.

Antique Audio (512) 467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits

Antique Electronic Supply Co. (602) 820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

• SLMR 2.1a • It's always darkest just before you step on the cat!

3707. Parts & kits (2)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 23:19:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.361.546@acenet.com>
Source record: 115247

From: brian.carling@acenet.com

Antique Radio Classified (508) 371-0512 Write for free sample.
P.O. Box 802 (or is it Box 2?) Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Appleseed Electronics Inc. (219) 489-9802
P.O. Box 8228
Fort Wayne, IN 46898 Parts

ARE Communications Ltd. 44-081-997-4476
6 Royal Parade
Hanger Lane, Ealing HF kit for ICOM R-7100 to 200 kHz !
London W5A 1ET & SSB kits for Icom R-100 and R1.

Arlen Supply Company (610) 352-9311 / -9388 = FAX
7409 W. Chester Pike
Upper Darby, PA 19082 Tubes. 1 million stocked. Minimum $150.00!

Arlington Electronic Wholesaler
Lee Highway
Arlington, VA Electronic parts

Arrow Electronics Inc. (800) 93-ARROW
1860 Smithtown Avenue Catalogs c/o 25 Hub Drive
Ronkonkoma, NY 11779 Melville, NY 11747
Minimum $25.00 Components distributor.

ARRL
225 Main Stret
Newington, CT 06111 (QRP Books, QST Magazine etc.)

A.R.S. Need address Arizona
(602) 820-5411 Tubes

David Ask No phone number given
RR 2
Houston, MN 55943 Tubes 4, 5 and 6 pin tubes. Send $1 for list

Jeff Bauman WB5KZW 6647 Stonebridge East,West Bloomfield, MI 48322
(313)-435-9922 (313)-661-0202 Jeff had 1500 tubes for sale as of
December,1993

BCD Electro (214) 343-1770
P.O. Box 830119
Richardson, TX 75083 Catalog, parts, etc.

Bigelow Electronics No number listed
P.O. Box 125
Bluffton, OH 45817 Parts, Catalog $2. Flyer 1 stamp

Bomar Crystals (201) 356-7787
201 Blackford Avenue (800) 526-3935
Middlesex, NJ 08846 Crystals, TCXOs etc.
Might be out of business (was OK in 1985)

Ron Borland, W4YBF No phone number given
1165 Ashley Loop
Reidsville, NC 27320 Fuses, grab bag of 50 for $2.00

Brian E. Brachel, KA8HLI
P.O. Box 71684 Cordless Phone Patch kit $30.00
Madison Heights, MI 48071-0684 See QST March 1988

Brigar Electronics (607) 723-3111 FAX: (607) 723-5202
7-9 Alice Street
Binghampton, NY 13904 Parts, gadgets $30 min.

Mel Brooks, K5DJB No phone number given
932 Macklyn Lane
Bartlesville, OK 74006 Tubes, parts, schematics (incl. antique)

C & N Electronics (800) 421-9397 / (612) 429-9397
6104 Egg Lake Road FAX # (612) 429-0292
Hugo, MN 55038 Buy & sell tubes

C & S Electronics (203) 866-3208
P.O. Box 2142
Norwalk, CT 06852-2142 Specialty RF chips etc.

C & S sales inc (800) 292-7711
1245 Rosewood ave
Deerfield Il 60015 Test gear, kits, $35 rcvr for 2m/6m etc.

 SLMR 2.1a Despair: an extra tire in da trunk!

3708. Parts & kits (3)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 23:20:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.362.546@acenet.com>
Source record: 115248

From: brian.carling@acenet.com

Calrad Corp. (213) 465-2131
819, N. Highland Avenue
Los Angeles, CA 90038 Audio parts, transformers etc.

John Cable Address needed (619) 258-7931
Tubes from 1941 to 1960, new.

Capitol Radio (301) 840-5700
45 West Watkins Mill Rd Catalog available
Gaithersburg, MD 20877 New electronic parts, tools, test equip.

CeCo Communications (212) 646-6300
2115 Avenue X
Brooklyn, NY 11235 (Vacuum tubes)

Circuit Board Specialists June 1993 Mailed returned, no forwarding address
P.O. Box 969
Pueblo, CO 81002 (Various kits & projects, P.C. boards)

Circuit Specialists Inc. (800) 528-1417
Box 3047
Scottsdale, AZ 85271 Electronic components incl. RF parts

Circuitwerkes Co. (904) 331-5999
No address FAX: (904) 331-6999
DTMF decoders etc.

Communication Concepts Inc. (513) 426-8600 or (513) 220-9677
508 Millstone Drive (513) 429-3811 = FAX
Xenia, OH 45385 (HF linear amp kits etc.)

CQ RADIO KITS (416) 775-9119
Box 1546
Bradford, ONTARIO
Canada L3Z 2B8 QRP xcvrs, rcvrs, keys etc.

Crystal set society (314) 725-1172
P.O. Box 3026
St. Louis, MO 63130 Handbook, projects, formulas

Crystek Crystals (800) 237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

Curtis Electro Devices (415) 964-3846
Box 4090

Mountain View, CA 94040 Keyer chips etc.

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

CW Forever Key Co. send stamp for list.
P.O. Box 659
Manchester, MO 63011 Buy & sell keys etc.

Cy-ance Kit, (501) 839-8293
14786 Slate Gap Road
West Fork, AR 72774 80 different kits

Daily Electronics (206) 896-8856 / (800) 346-6667
10914 N.E. 39th Street Fax # (206) 896-5476
Vancouver, WA 98682 Tubes, all types.

Dallas Solar Power (800) 345-4913
P.O. Box 611927
San Jose, CA 95161 Photovoltaics, Solar cells, chargers

Dan's Small Parts And Kits (Formerly KA7QJY Components)
1935 S. 3rd W. #1
Missoula MT 59801
1-406-543-2872 SASE for a current list of parts. RF parts,
(801) 563-5173 (Danny Stevig)

Davilyn Corp. (800) 235-6222 / (818) 787-3334
13406 Saticoy St. FAX: (818) 787-4732
North Hollywood, CA 91605-3475 Surplus electronic gear, incl. Collins.

SLMR 2.1a Infantry: A sapling.

3709. Parts & kits (4)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 23:20:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.363.546@acenet.com>
Source record: 115249

From: brian.carling@acenet.com

DC Electronics (800) 423-0070 / (602) 945-7736
P.O. Box 3203 FAX: (602) 994-1707
Scottsdale, AZ 85271 Components. Many ICs.

Debco Electronics (800) 423-4499
4025 Edwards Road
Cincinatti, OH 45209 Components, especially chips etc.

DH Distributors (316) 684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Digi-key (800) 344-4538
701 Brooks Avenue S. or 1-800-DIGI-KEY
P.O. Box 677
Thief River Falls, MN 56701 Parts

Ditek Industries (800) 762-9328
*** NEED ADDRESS ***
(CW paddles, keyers etc.)

DWM Enterprises (No number listed)
1709 N. West Avenue #103
Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

DX Radio Supply (610) 273-7823
Box 360 Call or write for catalog
Wagontown, PA 19376 Kit retailer. Ramsey, etc.

Eidson Crystal Company (No number listed)
Address needed Mr. Merill Eidson
Temple, TX Crystals for older rigs.

ELECTRIC RADIO
AM International publishes a column in ELECTRIC RADIO magazine, which is
probably the best source for articles on vintage amateur radio and AM.
A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

Electrogadgets Inc.
P.O. Box 2065
Morris Township, NJ 07962 Digital voice recorder kits $20.00

Electron Tube Enterprises (802) 879-0611
Box 311
Essex, VT 05451 Tubes

Electronics Exchange (314) 426-3056
No address given
St. Louis, MO Electronics suurplus. Call for catalog.

Electronic Goldmine (602) 451-7454
P.O. Box 5408
Scottsdale, AZ 85261 Kits, parts etc.

Electronic Rainbow (317) 291-7262 / -7269 = FAX
6254 LaPas Trail
Indianapolis, IN 46268 Various electronics kits

Elktronics Northeast Co. (603) 525-4001
Rt. 1 Box 789
Hancock, NH 03449 VFO kit, RF amp, filters etc.)

William Erickson, W4UIL No phone number given
3905 Cherrywood Lane
Annandale, VA 22003-1901 Tubes, older radios etc.

E.S.R.C. (407) 735-3397
P.O. Box 1192
Delray Beach, FL 33447-1192 Buy, sell, swap tubes of all kinds

Fair Radio Sales (419) 227-6573
1016 E. Eureka (419) 223-2196 FAX: (419) 227-1313
Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

Fala Electronics (No number listed) send s.a.s.e.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

Falkner Enterprises of America Inc.
312 River Street (319) 687-2479
Sabula, IA 52070 Batteries, electronic parts, catalog

• SLMR 2.1a • Any moderators here? <WHAP!> Any more??

3710. Parts & kits (5)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-07 23:20:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.364.546@acenet.com>
Source record: 115250

From: brian.carling@acenet.com

FAR Circuits (N9ATW) (No number listed)
18 N 640 Field Court
Dundee, IL 60118 (P.C. boards etc.)

Fordham Radio SUpply (800) 695-4848
260 Motor Parkway
Hauppauge, NY 11788 Tools and test equipment

Robert Fowle (517) 789-6721
1215 Winifred Street Buy/sell vintage gear, NOS parts, manuals
Jackson, MI 49202-1946 Hammarlund parts, numerous others too

R.M. Fuller Co. (800) 626-6662
902 Industry Drive
Seattle, WA 98188 DTMF decoder chips & info.

Gateway Electronics (800) 669-5810 Orders
8123 Page Blvd. (314) 427-6116
St. Louis, MO 63130 Parts, gadgets $10 min.

G4ZPY Paddle Keys no number listed
c/o Charles Tryor, N4LMY
7809, 10th Avenue S.
Birmingham, AL 35206 Various keys

Glass Audio Magazine (603) 924-9464 / -9467 = FAX
P.O. Box 176 Bi-monthly $20/year
Peterborough, NH 03458-0176 Designs for tube equipment

Richard Gray, WA6LRR (619) 977-6033 / 390-8937 = FAX
11869 Hi Ridge Road
Lakeside, CA 92123 Buy & sell old radio gear,parts (pre 1940)

H & R Company (800) 848-8001 / (215) 788-5583
(Herbach and Rademan) FAX: (215) 788-9577
18 Canal Street, P.O.Box 122
Bristol PA 19007-0122 Tools, parts etc. Min. $25 Free catalog

The Ham Key Co. (800) 527-0807
Division of Ham Radio Center Inc.
8342 Olive Boulevard
St. Louis, MO 63132 (Paddles, keyers, SWR meters etc.)

Hamtronics, Inc. (716) 392-9430 / - 9420 = FAX
65 Moul Road 10m, 6m, 4m, 2m, 220
Hilton, NY 14468-9535 Receiver kits, receivers, converters

Heathkit Co. (800) 253-0570

Benton Harbor, MI Some parts & manuals still available

Melvin Heineken, K5MNJ No phone number given
2204 Spruce Needle Rd. N.E.
Rio Rancho, NM 87124-6308 Tubes. New unboxed. Other parts.

Hosfelt Electronics (800) 524-6464
2700 Sunset Blvd. FAX: (614) 264-5414
Steubenville OH 43952 No minimum. Surplus electronics.

C.M. Howes Communications (44) 327-60178
Eydon, Daventry,
Northants NN11 6PT
England QRP transmitters, receivers, misc. Also
sold by Townsend Electronics in the U.S.

HSC Electronic Supply (Halted Specialties Co.) (800) 442-5833 orders
3500 Ryder Street (408) 732-1573
Santa Clara, CA 95051 Surplus (new) electronics new and used test
equipment. Min order $10 ($2 handling charge under $20), plus UPS

Heathkit 800-253-0570
Benton Harbor, MI
Old Heathkit replacement parts until depleted plus schematics and
manual copies for some of the old Heathkits. Call with model # and or
part number. They may still have it.

Henry Radio Co. (310) 820-1234
2050 S. Bundy Drive
Los Angeles, CA 90025 New tubes

 SLMR 2.1a It said "insert disk #3", but only two will fit...

3711. Re: Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 00:16:40 UTC
From: fcr@ll.mit.edu
Message-ID: <1994Dec8.001640.2617@ll.mit.edu>
Source record: 115243

Another advantage of upconversion is that the LO needs to tune over
a smaller range (in octaves). For, say a 5 MHz IF, a DC-30 MHz receiver
would need an LO that tuned 10 to 35 MHz or 3.5 octaves. For a
40 MHz IF, the LO range would be 40-70MHz, less than one octave.
The number of octaves of tuning range determines the complexity
of the oscillator used to form the LO (all other things being equal,
which they aren't really)

Also, the tuning range can lead to a difficult design problem
if you wanted to use a simple phase-locked loop for synthesizing the
first LO because of the variation in loop gain. I would never
design a single loop synthesizer to cover 10 to 35 MHz, while I
might for 40-70 MHz.

Frank Robey V73FR/N1PKT Kwajalein Systems Engineering
Kwajalein, RMI MIT Lincoln Laboratory
Latitude: 8 deg 43' 24", Longitude: 167 deg 44' 12" E
P.O. Box 224
APO AP 96555

3712. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 00:38:54 UTC
From: pirwin@julian.uwo.ca
Message-ID: <pirwin.15.2EE6559B@julian.uwo.ca>
Source record: 115244

Waltk@pica.army.mil writes:

>From: Waltk@pica.army.mil
>Subject: Litz Wire & Toroids
>Date: 7 Dec 94 19:17:16 GMT

>What is Litz wire, what shapes, and sizes should one use when
>constructing an HF amplifier, more specifically at 1.8 Mhz. I notice
>Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
>I guess these are the guage and the number of strands in each wire.
>What size does this correspond to, that I may be familiar with?
>Are there other suppliers, and how does one properly size the wire
>for the application. Can the above sizes accomodate my application.

Hi.
Litz wire is wire made up of many fine strands which are
individually insulated and wound in such a way that each wire occupies every
position (from the outside to the inside of the wire) equally. The
individual conductors are made at least as thin as the theoretical skin-
depth at the frequency you wish to use it at.

I happen to have a fairly good supply of Litz made up of 150
strands of 48AWG wire (each strand about 1.25 mills in diameter). The wire
has a total diameter roughly equal to 28 AWG, but it will conduct 1800
kilocycle RF much better than solid wire of the same size. I don't think my
stuff has as many conductors as you will need to make something that
conducts better than 12AWG wire, but I suspect that you could wind some of
these together to make a super good litz wire.

I thing that 10/44 Litz is made up of ten strands of 44AWG wire. I
don't think it will do for your application. If you think that some of my
150/48 wire will do you some good, email me at pirwin@julian.uwo.ca.

oops, I just realized that some other people might want some of the stuff
and I could run out pretty quickly. I'd still like to help the poster out if
other people think that my wire might do some good.

Peter.

Peter Irwin
pirwin@julian.uwo.ca

3713. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 09:44:14 UTC
From: k23690@proffa.cc.tut.fi
Message-ID: <3c6khe$ivc@proffa.cc.tut.fi>
Source record: 115252

Alan Bloom (alanb@sr.hp.com) wrote:

Waltk@pica.army.mil wrote:

[deleted]

> : The toroidal inductor is a stack of 3 cores of T-225A (2.25" OD),
> : u=10 (Red, mix=2). The cores are stacked and wrapped with Scotch
> : (67) fiberglass tape. The wire used is 12 guage Thermoleze wire. ...

I am not sure what kind of wire gauge numbering is used for Thermoleze wire on the other side of the Pond :-) but appearently we are talking about a copper wire about 2 mm in diameter.

[deleted]

> We all know about skin effect. It causes the RF current to flow on the
> surface of the wire, increasing the effective RF resistance.

The penetration depth into copper at 1.8 MHz is about 50 um. Thus a 2 mm copper wire behaves like a copper tube with 2.0 mm OD and 1.9 mm ID and the resistance measured at 1.8 MHz is about 10 times the value measured with a DC-multimeter (0.05 ohm/m at 1.8 MHz and 0.005 ohm/m at DC).

The penetration depth is inversely proportional to the square root of frequency, so it is easy to calculate it for other bands.

To check if skin effect is significant in a particular case, here is a simple test. If we by "significant" mean that the resistance has doubled from the DC value, this also means that the effective cross area has dropped to 50 %. This is equivalent to a copper tube with OD equal to the wire diameter and ID = 0.71 OD or a wall thickness of 0.14 OD.

Thus the resistance will be doubled (compared to the DC value) if the wire diameter is more than 7 times the wall thickness (=penetration depth). For 1.8 MHz this is about 0.35 mm or AWG 27.

When making your own Litz wire for 1.8 MHz, the strands should be thinner than this.

[deleted]

> : what shapes, and sizes should one use when
> : constructing an HF amplifier, more specifically at 1.8 Mhz. I notice
> : Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
> : I guess these are the guage and the number of strands in each wire.

If the wires are intended for HF then it makes much more sense if those numbers mean eight or ten AWG 42 or AWG 44 strands. The strand

diameter would be 64 um resp. 51 um. Comparing this to the penetration depth of 50 um at 1.8 MHz, the resistance at 1.8 MHz would be practically the same as at DC. In fact for 8/42, the resistance go from 0.7 ohm/m at DC to 1.4 ohm/m at 50 MHz.

Even if the resistance for the 2mm wire at 1.8 MHz is about ten times higher than on DC, the absolute resistance at 1.8 MHz is still about ten times smaller than for the 8/42 at the same frequency.

Paul OH3LWR

--
Phone : +358-31-213 3657 Mail: Hameenpuisto 42 A 26
Internet: Paul.Keinanen@cc.tut.fi FIN-33200 TAMPERE
Telex : 58-100 1825 (ATTN: Keinanen Paul) FINLAND
X.400 : G=Paul S=Keinanen O=Kotiposti A=ELISA C=FI

3714. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 10:30:20 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3c6n7s$pvi@info4.rus.uni-stuttgart.de>
Source record: 115260

> I'm looking for a way to make a small dummy load to test out my qrp rig
> it's fourty meter and puts out(supposed to put out) 1.5 wats.

Robert,

You will surely find some small tin (can) with a lid that closes well.
From tobacco, sweets or something else. Mount a plug (PL or BNC)
in it and say, 4 * 1/2 Watt resistors of 200 Ohms (anything that
gets you near 50 Ohms) in parallel.

Use carbon or metal film resistors. Cunstruction becomes only critical
above 1300 MHz.

Good Luck, Moritz DL5UH

3715. HELP: Source for TCM3105 IC..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 17:04:27 UTC
From: desaid@muvms6.wvnet.edu
Message-ID: <1994Dec8.130427.3003@muvms6>
Source record: 115258

Hello All:

I am trying to find the source for TCM3105 IC for the project
of Baycom TNC. If you know the source or supplier, please let
me know. I tried to find in all the cross reference books and
could not locate that part.

Thanks in advance

73
Dinakar kb8vhc

Desaid@muvms6.mu.wvnet.edu
or desaid@marshall.edu

3716. Re: FYI: Modify 6LQ6-based HF amp for cheaper tubes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 17:21:02 UTC
From: Bill.Nadzam@juts.amdahl.com
Message-ID: <NEWTNews.7418.786911050.bgn00@juts.amdahl.com>
Source record: 115253

In article <dgfD0Go84.1rM@netcom.com>, <dgf@netcom.com> writes:

> Their phone # is 602 820 5411 and they are in Tempe AZ. I am posting this for
> info only, and I have no relationship with AES other than as a customer.
>
> 73 Dave WB0GAZ dgf@netcom.com

Hey Dave that is a good Idea. One might want to place a 6.3VAC filiment transformer in reverse to the 6.3 VAC that was used to power the 6LQ6's. That would still give you 117AC plus Isolate the 31LQ6's from the line.

3717. help id diodes

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 19:45:05 UTC
From: loase@iccgcc.cle.ab.com
Message-ID: <1994Dec8.144505.1@iccgcc.cle.ab.com>
Source record: 115254

Can anyone help me identify M1301 and M1402 diodes. They are in a Kenwood TR7800. If you know where to find them I would appreciate that information as well. I called Kenwood and they want $12.00 for the M1402 and $7.00 for the M1301. The price seems high for diodes but I can't be sure unless I can identify them.

Thanks
Jim Loase WD8RPT

3718. Re: Upconversion was(Re: Overtone Crystals for Crystal Filters?)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 19:58:21 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3c7ogt$nca@hpscit.sc.hp.com>
Source record: 115255

In article <1994Dec7.163616.5466@ke4zv.atl.ga.us>,
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:
>In article <1994Dec6.153723.32090@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>>KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>>: Since the first IF need only consist of a roofing filter, which can be
>>: a simple helical design, a SBL-1, a MAR-4, another SBL-1 and a 51 MHz
>>: crystal second LO, and another MAR-4 as a post amp, to get you down to
>>
>>Why use a MAR-4? It generates almost as much noise as it has gain.
>>6.5 dB NF, 8.5 dB gain. This approach seems pretty noisy to me--over
>>20 dB NF (two mixers, two filters, and two noisy post amplifiers)
>
>A MMIC offers a broadband termination to the mixer, thus getting rid
>of some potential intermod problems. I like the MAR-4 because it has
>a relatively high intercept. This *is* a HF receiver, weak signal
>Gary

Most MMIC's of the MAR-4 ilk have a fairly poor output VSWR spec like
3 to 1, so you still don't get a great mixer match.

Rick N6RK
rkarlqu@scd.hp.com

3719. Microstrip Tuning Techniques

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 21:23:18 UTC
From: kbanke@qualcomm.com
Message-ID: <kbanke-081294132225@kbanke-mac.qualcomm.com>
Source record: 115257

Microstrip Tuning Techniques
Kerry Banke - 8/28/94

This is a description of the basic approach I have used to successfully retune many tens of surplus amplifiers.

General precautions:
Every thing must be grounded to power (earth) ground including the soldering iron tip. The typical FETs in microwave amplifiers will self destruct with more than 5-10 volts on the gate.

Apply only as much input rf power initially as required to get a usable output measurement. This reduces the chance of damage to higher power devices prior to getting the output matched. Also this prevents saturation of a stage which then appears to not respond to tuning. Applying more than about +10 dBm directly to small FETs may cause damage.

Use current limited power supplies set to limit slightly above normal expected operating current. This will in most cases prevent blowing up the FETs if the negative gate bias is missing or something is accidentally shorted with the tuning wand. With this approach, sequencing of the power supplies is not usually important.

Place attenuators directly at the input and output of the amplifier. This removes the effect of poor cable, source and power detector matching.

Always remove power when making connections and soldering tuning stubs. Make sure amplifier output is terminated before applying power.

Tuning procedure:

Prepare tuning wand and tuning stub material. Cut about 1" or 2" strips about .080" wide (not critical) or about the same width as the main 50 Ohm microstrip lines in the amplifier from thin copper or brass stock (.003"-.010"). Tin both sides of the strips and flick off excess solder. Make several tuning wands by cutting one end of a wooden toothpick square at the largest diameter. Using superglue, attach a square (.080"X.080") of the prepared tinned copper or brass to the cut end of the toothpick. Wipe off excess glue from the exposed side of the square & let dry.

Remove existing tuning stubs. Using a Exacto knife, make a deep enough cut to disconnect existing tuning stubs from the main 50 Ohm line. Be careful not to cut the thin bias lines. If you are unsure of possible damage to the bias lines, carefully check continuity or use a magnifier to do visual inspection before applying power. In some cases it pays to go through the agony of removing the stub completely as the correct new stub placement may overlap & cause problems.

Connect the amplifier to signal source, attenuators, power detector and power supplies. Turn on power and adjust input attenuation for as low of input as can be readily detected on output. Start at output and slide tuning wand along (in contact with) the main 50 Ohm line watching for an increase in output. Note the maximum output reading obtained with the wand. Remove power and solder a square of the prepared material in the same position as noted by the wand. Do not add solder. The tinning is normally sufficient to allow the new tuning stub to be held in place with the pointed end of a toothpick and then just touched with the soldering iron to reflow the solder. Turn on power and verify that the output is as high or higher than obtained with the wand. Move the tuning stub if required to obtain results equal to or better than the wand. Slide the wand over the previously attached new stub & if improvement can be made, attach another square. continue this for the entire length of the main 50 Ohm line until no further improvement is found. Increase the input power if working with a power amplifier and retune the output stage for maximum power. Be careful here so as not to mismatch the output so bad with the wand as to damage the FET.

The process can be very slow with some stubs only gaining a fraction of a dB. In most cases it will take all of those small increases to get good results so don't expect to see major improvement necessarily with a few stubs. It may take 4 stubs per stage sometimes to get the maximum output.

Good luck in this very rewarding process.

Kerry Banke
619-462-2220
Internet address kbanke@qualcomm.com

3720. Re: Looking for CDROM based parts catalog

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 21:33:11 UTC
From: hbrown@nadir.resd
Message-ID: <1994Dec8.213311.25380@knight.vf.ge.com>
Source record: 115256

Allied Radio has a new CD ROM of their catalog. I have seen their as but do not know if is free or not.

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3721. Morse trans.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 21:37:08 UTC
From: pollack ziv <pollack@black.bgu.ac.il>
Message-ID: <3c7ua4$fva@bgumail.bgu.ac.il>
Source record: 115133

I'm looking for a diagram of a simple morse transmitter
to the 7 mhz or to the 21 mhz (QRP).

Thnks.

+---+
Ziv Pollak	" There must be a
Ben Gurion University, Israel	better way to start
E-mail: pollack@black.bgu.ac.il	the day than to wake
Ham Radio Call sign: 4Z9ACH	up in the morning. "
+---+
| Check out my new home page at: |
| http://www.cs.bgu.ac.il/~pollack |
+---+

3722. Re: Part supplier for sm caps and inductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 21:49:01 UTC
From: hbrown@nadir.resd
Message-ID: <1994Dec8.214901.25753@knight.vf.ge.com>
Source record: 115259

Mini Circuits sells Chip Capacitor kits in addition to kits of amps, mixers, etc. Their KCAP-1 kit has 50 each of 17 values of chip capacitors. There are 850 caps for $99.95.

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3723. RE: Frequency Doubling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 23:46:09 UTC
From: nhoenig@kean.ucs.mun.ca
Message-ID: <1994Dec8.201609.1@leif>
Source record: 115262

In article <1DEC94.15581648@skyfox.usask.ca>, koehler@skyfox.usask.ca writes:
> This has been a neat discussion. Just for fun, I thought
> I'd try out a standard DBM as a doubler using some proper lab
> equipment. I connected a signal generator (50 MHz) to an old
> HP 10514A DBM. With the input signal at +10 dBm, the output at
> 100 MHz was down 12 dB (about what would be expected) and the
> 50 MHz fundamental was down 45 dB relative to the input. Not bad!
>
> I didn't look at higher harmonics.
>
> Jim, VE5FP

3724. Re: Overtone Crystals for Crystal Filters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-08 23:53:40 UTC
From: dbashaw@synoptics.com
Message-ID: <3c86a4$5k6@inn.synoptics.com>
Source record: 115261

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: Where is it written that for a ham band
: only receiver, you have to upconvert to VHF to get good image rejection?

I'd love a good HAM-ONLY xcvr, hf or vhf! A friend recently complained about trying to copy a qso on 10m and a local 11m qso making that hard to do.

Later: David GM4ZNX Wrote:
:I don't think the Japanese went up converting to share designs with
:marine and SWL, I think they saw general coverage RX as the
:justifications.

I think this is the reason for the above complaint as well as my own complaint about my vhf mobile suffering when connected to a j-pole at 30ft. I live a block from the local cop shop and its ~70ft tower holding up 3 colinear antennas.

My point? Very few ham-only rigs can be bought new. Too bad!!! Homebrewing abilities are a plus if the dc-thru-daylight blues have you down. General coverage is good but I want a real ham radio, not a scanner with a ham transmitter bolted to it. Maybe I should try my hand at a ham-only receiver.

Sorry for drifting but it felt good to get that off my chest.

73
Dave
wa6qwl

3725. Re: headset with micropho

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 00:57:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.387.546@acenet.com>
Source record: 115263

Newsgroups: rec.radio.amateur.homebrew,rec.radio.amateur.equipment

LH>u are obviously unaware that the headphones that come as part of the Heil
LH>BM-10 are from Radio Shack. I can vouch for Heil's mic elements, but I
LH>am less than impressed with the headphones. Wouldn't be so bad if Bob (Heil)
LH>would include this information in his ads.

LH>Larry Horlick
LH>VE8HL
LH>geret@inukshuk.gov.nt.ca

Larry, do you have the address for Heil? Phone number?
I want to see a catlog & maybe buy a mic element or a mic
from him. Thanks & 73 - Brian Carling AF4K (ex-G3XLQ)

brian.carling@acenet.com

• SLMR 2.1a • Veni, Vidi, Velcro: I came, I saw, I stuck around.

3726. FYI: Modify 6LQ6-based HF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 01:01:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.388.546@acenet.com>
Source record: 115264

Newsgroups: rec.radio.amateur.homebrew

DF>I have an old Dentron GLA-1000B HF amplifier (80-10M, about 600W out) that
DF>uses four 6LQ6 tubes. The tubes are very expensive and hard to find nowadays

DF>I received a flyer from Antique Electronic Supply offering a sale price on
DF>31LQ6 tubes, $4.50 each. The tubes I received are "ECG" brand, altho they
DF>don't have a brand logo on the tube envelope itself. They are packaged in
DF>white non-logo boxes, but are new. I substituted four of these tubes for the
DF>6LQ6's originally in the Dentron, and rewired the filaments for series
DF>operation, using the 117VAC mains in series with the 6.3VAC filament winding
DF>giving me about 124VAC. This makes the filaments "hot" with respect to the A
DF>mains, although the only side-effect of the change was some RF getting back
DF>into the AC mains, which I cured with some bypass capacitors (the filament-
DF>to-heater capacitance is a few pF, so there is a non-zero amount of coupling
DF>that would normally be absorbed by the filament transformer inductance).

Dave, this just plain bad practice. You are asking for a lot of RFI and
TVI of all kinds for one thing, and posing a severe safety problem for
another. If I did this to an amplifier, I certainly wouldn't tell other
people about it. I don't mean to be rude to you, but I wouldn't want to
be responsible for the death of another amateur that tried this kind of
trick with high powered equipment, or for a serious RFI problem that
it could and almost certainly would create.

73 de AF4K
brian.carling@acenet.com

• SLMR 2.1a • A Religion is a Cult with Real Estate

3727. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 02:06:29 UTC
From: lascal@marcus.its.rpi.edu
Message-ID: <3c8e36$8q6@usenet.rpi.edu>
Source record: 115265

moritz@ipers1.e-technik.uni-stuttgart.de wrote:

: Use carbon or metal film resistors. Cunstruction becomes only critical
: above 1300 MHz.

I beg to differ!
-Lance

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
http://www.rpi.edu/~lascal/
Mount Greylock Expeditionary Farce Secret agent #52,342

3728. Mod. on IC2AT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 07:14:27 UTC
From: teixeira@ccnet.com
Message-ID: <3c904j$87d@ccnet.ccnet.com>
Source record: 115134

I have an IC2AT 2 meter HT. I would like to empty an old battery pack and connect it to a cig. adapter for the car. Question: can I run 12v to the 2AT or do I have to reduce it to 7.2v????

Don N6FNL <teixeira@ccnet.com>

3729. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 13:39:50 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <142777795wnr@ifwtech.demon.co.uk>
Source record: 115267

In article: <3c5bp6$mf3@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:
>
> In article <3c57gt$gfh@canyon.sr.hp.com>, Alan Bloom <alanb@sr.hp.com> wrote:
> >
> >: Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
> >: I guess these are the guage and the number of strands in each wire.
> >
> >That would be my guess. I would try the #10, since that is closest to
> >the guage it replaces in your current amplifier.
> >
> >AL N1AL
>
> Are you sure? I thought "10/44" means ten strands of #44 wire (which
> would result in an effective gauge of #33), not 2500 stands of #44 wire
> (which would result in an effective gauge of #10).
>
> Rick N6RK
> rkarlqu@scd.hp.com

Sorry I can't help in interpreting "10/44", except that perhaps it means
44 strands with the same overall diameter as #10. 44 strands seems about
right for typical Litz wire, doesn't it? Ten would be too few, and 2500
too many.

Because of the skin effect, the HF conductivity of Litz wire will be
proportional to the total *circumference* (of all strands added together),
and not the total cross-section.

Roughly speaking, the HF conductivity will be enhanced in proportion to
the number of separately insulated strands, compared to a single wire of
the same overall diameter.

--
73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

3730. 10 turn 100K pot needed -

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 13:43:54 UTC
From: bhowle@freud.inst.com
Message-ID: <3c9muq$fc5@freud.inst.com>
Source record: 115266

Does anyone in net-land have a ten turn 100k pot I could buy for cheap?

need to find this part to finish my NE 40-40 QRP rig in fine fashion -

also looking for a small panel mount turns counter for the above.

TNX / Bob / WA4ZID

3731. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 15:37:31 UTC
From: richard@smoky.sps.mot.com
Message-ID: <RICHARD.94Dec9093731@smoky.sps.mot.com>
Source record: 115168

> >
> >: Amidon carries it and they have sizes listed as 8/42, 8/44, 10/44.
> >: I guess these are the guage and the number of strands in each wire.
> >
> >That would be my guess. I would try the #10, since that is closest to
> >the guage it replaces in your current amplifier.
> >
> >AL N1AL
>
> Are you sure? I thought "10/44" means ten strands of #44 wire (which
> would result in an effective gauge of #33), not 2500 stands of #44 wire
> (which would result in an effective gauge of #10).
>
> Rick N6RK
> rkarlqu@scd.hp.com

You are correct. It is 10 wires orf gauge #44. Also the reason that the Q goes up when the coil is air wound is because of the lack of losses caused by the ferrite material. The closeness of the wires increases inductance and parasitic capacitance. It has nothing to do with generating heat, unless they are overlapping or touching in which case the copper might keep the core from release the leat and thus heating the core even more, But this usually only happens when there is a lot of copper on the core.

BTW Litz wire is usually used for low power application (IMHO). Litz wire is expensive and think of how much you would need to create a #10 wire.

--

```
/\ /\ . /\____
/\ / \ _/\ / \ /\ / \ /\ /
/ \ / \ / \ /\/ \ / \_/\_/ Y \ /\/\/ \ /
\/\/ \_____/ \/ \ / \/ \/
```

Richard Christensen
richard@newt.ee.byu.edu Go Cougars!! Beat Utah!!!
richard@smoky.sps.mot.com

3732. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 17:45:04 UTC
From: rkarlqu@scd.hp.com
Message-ID: <3ca530$l9k@hpscit.sc.hp.com>
Source record: 115169

In article <RICHARD.94Dec9093731@smoky.sps.mot.com>,
Richard Christensen <richard@smoky.sps.mot.com> wrote:
>
>You are correct. It is 10 wires orf gauge #44. Also the reason that
>the Q goes up when the coil is air wound is because of the lack of
>losses caused by the ferrite material. The closeness of the wires

Don't jump to conclusions. I can take a little toroid (see 1/2" diameter)
and wind it with 28 gauge magnet wire and get a Q of around 400.
To do this with an air core coil, I would have to use 1/4 inch copper
tubing on a 6 inch form. If you're getting lower Q with ferrite,
you are either using the wrong ferrite, or you have fallen into the
trap of winding a few turns of heavy wire on the toroid. To get
high Q, use lots of turns of small wire. This counterintuitive
phenonmenon is due to skin effect. Winding twice the number of
turns of wire half the diameter quadruples the inductance but only
doubles the RF resistance of the wire (unlike at low frequencies
where it also quadruples.) The RF resistance is proportional to
surface area, not wire core area.

Rick Karlquist, N6RK
rkarlqu@scd.hp.com

3733. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 18:00:53 UTC
From: jkaidor@synoptics.com
Message-ID: <3ca60l$b5@inn.synoptics.com>
Source record: 115170

In article mo0@newsbf01.news.aol.com, kenkd1xs@aol.com (Ken KD1XS) writes:
>In article <3c2muo$338p@yuma.ACNS.ColoState.EDU>,
>greendot@lamar.ColoState.EDU (Robert Taylor) writes:
>
>> I'm looking for a way to make a small dummy load to test out my qrp rig
>> it's fourty meter and puts out(supposed to put out) 1.5 wats.
>
>Pick up a 50 ohm 5W or 10W resistor from RS or other supplier. I soldered
>one to a 6"piece of coax and connected to a PL-259. Work great for QRP.
>

**** And make sure it's a non-inductive resistor. Most 5W or 10W resistors that you might buy at the store are wire-wound. At RF, they're nowhere near 50 ohms. It might be easier to find a set of 1/2, 1, or 2W carbon composition resistors that you parallel up to get 50 ohms. For example, 4 200-ohm 1W resistors would do nicely. Just make sure they're carbon comp!

- Jerry, KF6VB

3734. Need phone # or address of KOPPS Corp., Sacramento

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 20:24:27 UTC
From: dgf@netcom.com
Message-ID: <dgfD0K8os.Ksx@netcom.com>
Source record: 115171

About a month ago I ordered a pair of air-variable caps from KOPPS Corporation in Sacramento. Unfortuantely, I lost all information on them, and the parts I ordered haven't arrived (but check cashed...) I think they advertised in NUTS & VOLTS a couple of months back; perhaps 73 (I don't recall for sure, but the ad was in a November publication). Could anyone pass me info, or if you've dealt with them before, could you advise? 73 Dave WB0GAZ dgf@netcom.com

3735. Value of "Electronics Workbench" by Interactive?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 22:10:24 UTC
From: tkreyche@zdlabs.ziff.com
Message-ID: <tkreyche-091294141024@tomkreyche.zdlabs.ziff.com>
Source record: 115173

I just received a flyer in the mail for "Electronics Workbench" described as "The electronics lab in a computer." The product is a analog and digital circuit simulator, and is offered by Interactive Image Technologies Ltd. The offer is $149 for the current version V3.

Can anyone comment on the program? Is it useful, complete, bug-free? Professional or strictly hobbiest tool? Any competitive similar products?

There's a quote in the flyer from M.A. Chapman who says he used it to design a 6 meter receiver, article to be published in QST.

Thanks,

Tom KG6YJ

3736. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-09 22:45:45 UTC
From: sbertsch@magnus.acs.ohio-state.edu
Message-ID: <3cammp$1vm@charm.magnus.acs.ohio-state.edu>
Source record: 115172

```
>Use carbon or metal film resistors.
^^^^^^^^^^^^^^^^^^^^^

Don't. Metal film resistors are spiralled or laser helixed during manufacture,
ie. they're inductive. Stick to lowish value carbon composition.
```

3737. Hi power PIN diode switch?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 04:12:37 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <3cb9rm$d2r@colossus.holonet.net>
Source record: 115174

Could somebody help me with construction details for a PIN diode TR switch good for about 200 watts? Especially diode types and availability!

The one in my 1988 ARRL Handbook seems a good starting point; just wondering about diode types, other precautions for higher power, etc.

John Seboldt K0JD
Minneapolis

3738. Re: HELP: Source for TCM3105 IC..

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 09:25:55 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <787051555snz@lfheller.demon.co.uk>
Source record: 115176

In article <1994Dec8.130427.3003@muvms6>
desaid@muvms6.wvnet.edu "Dinakar" writes:

> I am trying to find the source for TCM3105 IC for the project
> of Baycom TNC. If you know the source or supplier, please let
> me know. I tried to find in all the cross reference books and
> could not locate that part.

The TCM3105 is made by Texas Instruments. They are quite easy to get
hold of here in the UK. Any TI distributor should have them.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3739. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 09:31:44 UTC
From: greendot@lamar.ColoState.EDU
Message-ID: <3cbsi0$a83@yuma.ACNS.ColoState.EDU>
Source record: 115175

Thanks to everyone for the help!!!! I ended up with 4 201 ohm 1/2 w
resistors they totaled out at about 51 ohms, and they seem to be working
fine.
Thanks Again Robert KB0PED

3740. Re: FYI: Modify 6LQ6-base

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 13:37:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.408.546@acenet.com>
Source record: 115199

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

BI>> 73 Dave WB0GAZ dgf@netcom.com

BI>Hey Dave that is a good Idea. One might want to place a 6.3VAC filiment
BI>transformer in reverse to the 6.3 VAC that was used to power the
BI>6LQ6's. That would still give you 117AC plus Isolate the 31LQ6's from
BI>the line.

Yes, that would be a LOT safer!!

• SLMR 2.1a • It's always darkest just before you step on the cat!

3741. Fyi: Modify 6lq6-Based Hf

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 21:02:00 UTC
From: joe.taylor@woodybbs.com
Message-ID: <93.3695.7584.0NFB73A2@woodybbs.com>
Source record: 115179

Hi Brian:
Don't be too hard on Dave for his series-ing his P.A. finals into the
117VAC mains.
Dave designs electric chairs for various state prisons. Ol' Al
Einstein said everything is relative.... compared to an electric chair
his AMP is a baby sitter <GRIN>.

Now lets see I have a teen-age neighbor with a 200 watt audio amp for
his guitar. It uses a bunch of 6V6s if I can change those to 25L6s
and series the filaments and then get some water flowing in his
garage.....
73 Joe N4NAS in Kentucky

• BgNet 1.0•12 • 049/000: Pipeline BBS - Glasgow, Ky - 502-651-2556

3742. 2400 and MORE bits/sec via SHORTWAVE, ANY inf. NEED

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-10 21:10:12 UTC
From: Dmitry Simanenkov <dima@pcom.spb.su>
Message-ID: <AAVjWwkew4@pcom.spb.su>
Source record: 115177
Cross-posted to: rec.radio.shortwave,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.digital.misc,hh.hamradio

I am interesting in 2400 and more bit/sec via shortwave 1-27 MHz, 300-3000 Hz with fading, multipath etc. hardware, software, service, developers, experiments

If you know something please say me

Dima

3743. Any info on Belgian regulation and exams

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 00:25:47 UTC
From: tw36291@vub.ac.be
Message-ID: <3cdgub$p3d@rc1.vub.ac.be>
Source record: 115178

Hi There,

Does anyone out there have more information on ham-clubs, exams - to - pass and so on?

Any info welcome,

Greetz,

Stan Claes

3744. Where to get IC LA4192?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 05:41:31 UTC
From: goldberp@iia.org
Message-ID: <3ce3eb$g6j@ankh.iia.org>
Source record: 115180

I'm looking for this IC and even more - for source of big catalog
of semiconductor components. Please mail any phone numbers
you'd suggest to call...
Thanks a lot in advance
Peter
goldberp@iia.org

3745. Re: Listen in to Scanner

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 16:16:16 UTC
From: parnass@nwsf.ih.att.com
Message-ID: <D0nMJ5.5Ju@nntpa.cb.att.com>
Source record: 115181
Cross-posted to: rec.radio.scanner,alt.radio.scanner,rec.radio.amateur.homebrew

In article <3cf5dm$i4o@news1.digex.net>,
Matt Wilson <wa2tpx@acy1.digex.net> wrote:

>Anyone know of a way that I can call my home phone number
>and listen to my scanner? Is there some way that I could
>have the phone answer and "connect" me to my scanner?
>Any thoughts/ideas on this one would be appreciated.

Although you can build a solid state, compact equivalent,
I use a controller I built from a pile of relays and described it
about 7 years back:

FROM JUNK TO A JEWEL

Copyright 1987, Bob Parnass, AJ9S

[NOTE: This article may not be reproduced in whole or in
part on CDROMS, in bulletin boards, networks, or
publications which charge for service without permission of
the author.]

One Saturday morning last year, my wife Pam, N9HRZ, brought
home 3 large gray steel relay boxes from a garage sale. She
didn't know what they were, but was sure they were a "steal"
at $5 apiece.

My examination brought disappointment. These 35 lb. "boat
anchors" appeared to be something ripped out of a factory
control system. The outsides were filthy, and someone had
spilled oil inside of them.

Pam sensed my unhappiness with her find, so she offered to
ask her dad, KA9CAI, to sell these boat anchors at a hamfest
so we could get back some of the $15.

For the past year, one box sat in my garage, and the other
two boxes sat in my father-in-law's garage.

Junk Reexamined

Each box had a large hinged door, protected against the
weather by a gasket. On the inside was a thick steel panel
with about 8 DPDT relays, a time delay relay, and several
toggle switches.

All relays were made by Potter & Brumfield, a top relay
manufacturer. Each had a 117 VAC coil, 10 amp contacts, and

was in a high quality Amphenol socket. The DPDT relays were enclosed in clear plastic dust covers, and had neon bulbs and resistors wired across their coils, which provided a visual indication of relay activation.

Components were wired together neatly to 2 large bakelite barrier (terminal) strips. All interconnecting wires had terminals crimped on at the ends, so a screwdriver was the only tool necessary to service the unit.

Now for the challenge: Could this "junk" be converted into a remote receiver controller, functioning like the one we brewed up at the Indian Hill ARC?

Time Delay Relay

The plug in time delay relay was a DPDT configuration, enclosed in a yellow cover. Instructions printed on the side revealed that the delay time was between 0.1 and 10 seconds, and was determined by the value of an external resistor.

Older delay relays use a thermal switch, which heats up over time, making or breaking contact after reaching a given temperature. Fortunately, my delay relay employed more modern circuitry. Inside was a printed circuit board with an actual solid state timer. The current Newark catalog lists this relay at $45, socket extra.

I wanted a delay adjustable between a few seconds and an 60 minutes. Not having a schematic of the timer, I applied 117 VAC to the coil and probed the circuit with a voltmeter. I found the capacitor that, along with the external resistor, determined the delay time.

A much larger capacitor was needed for long delays, but wouldn't fit within the relay case. I removed the original timing capacitor, and ran 2 wires from its old location to an external 220 ufd capacitor through a hole drilled in the case.

A Controller Takes Shape

The relays were rewired. A rheostat to set the timeout delay was mounted. Pilot lights, 1/4" phone jacks, and modular telephone jacks were installed.

The remote receiver controller at IHARC requires use of an external phone patch. We currently use a deluxe patch made by Waters.

Not wanting to tie up a phone patch for my home controller, I brewed up an interface to feed the audio output of a receiver to the phone line. It used a capacitor and 600 ohm

transformer salvaged from a discarded PC board, and a
varistor cut out from a telephone handset. The varistor
clips residual voltage spikes that could appear on the
telephone line from ringing voltage and damage the receiver.

The 35 lb. receiver controller works well. The only problem
to date is that the timer is unstable. Sometimes it times
out after 10 minutes, sometimes after 20 minutes, sometimes
....

I can use the setup to listen to a home scanner while I'm
away from home. As a "frill", I added a Morse Code
identifier. I recorded the message "Oswego RX" in CW on an
endless loop cassette tape, and play the tape on an old
cassette player. The player is powered from an AC outlet
which becomes live when the controller answers a phone call.
--

==========
Copyright 1994, Bob Parnass, AJ9S
AT&T Bell Laboratories - parnass@ihlpf.att.com - (708)979-5414

3746. Convert RS TRC-465 CB to 10 Meters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 16:30:24 UTC
From: Gary <garypewitt@delphi.com>
Message-ID: <Zax02pQ.garypewitt@delphi.com>
Source record: 115182

I have a new RS TRC-465 cb I have never used. I just passed my general test and I would like to convert my cb to somthing useful. Anyone having experiance (good or bad) with such a conversion please let me know. Thanks.

3747. Motorola BMS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 17:06:18 UTC
From: geret@gov.nt.ca
Message-ID: <1994Dec11.170618.16994@gov.nt.ca>
Source record: 115183

Not sure if this is the best ng to post this question, but here goes.

The Motorola BMS (for BAttery Maintenance System) can be used to cycle and condition nicad packs from 4.8 to 14.4 volts. Voltage selection is controlled by the particular cup used. The cup is molded to fit only Motorola packs. From what I can determine, aside from the shape of the cup the determining factor is a diode arrangement in a small pcb attached to cup and plugged into the main motherboard. Does anyone know the diode placement for the various standard nicad pack voltages. The cups that I have now are for 10 and 12.5 volts. I would like to have all possible voltages, but I am mostly interested in 13.75 and 8.75. HELP!

3748. Re: headset with micropho

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 17:14:09 UTC
From: geret@gov.nt.ca
Message-ID: <1994Dec11.171409.17317@gov.nt.ca>
Source record: 115184

In article <2a6.387.546@acenet.com> brian.carling@acenet.com (Brian Carling) writes:
>Newsgroups: rec.radio.amateur.homebrew,rec.radio.amateur.equipment
>
>LH>u are obviously unaware that the headphones that come as part of the Heil
>LH>BM-10 are from Radio Shack. I can vouch for Heil's mic elements, but I
>LH>am less than impressed with the headphones. Wouldn't be so bad if Bob (Heil)
>LH>would include this information in his ads.
>
>LH>Larry Horlick
>LH>VE8HL
>LH>geret@inukshuk.gov.nt.ca
>
>Larry, do you have the address for Heil? Phone number?
>I want to see a catlog & maybe buy a mic element or a mic
>from him. Thanks & 73 - Brian Carling AF4K (ex-G3XLQ)
>
>brian.carling@acenet.com
>---
> • SLMR 2.1a • Veni, Vidi, Velcro: I came, I saw, I stuck around.

```
The only catalog I have is several years old
Heil, LTD.
No.2 Heil Drive
Marissa, IL 62257

618 295-3000
618 295-3030 (fax)
```

3749. Fyi: Modify 6lq6-Based Hf

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 19:46:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.436.546@acenet.com>
Source record: 115185

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

JT>Hi Brian:
JT> Don't be too hard on Dave for his series-ing his P.A. finals into the
JT>117VAC mains.
JT> Dave designs electric chairs for various state prisons. Ol' Al
JT>Einstein said everything is relative.... compared to an electric chair
JT>his AMP is a baby sitter <GRIN>.

ROTFLL

JT> Now lets see I have a teen-age neighbor with a 200 watt audio amp for
JT>his guitar. It uses a bunch of 6V6s if I can change those to 25L6s
JT>and series the filaments and then get some water flowing in his
JT>garage.....

ROTFLVVL! You have a great sense of humor Joe. That's what living in KY
will do for you. While you are at it, let's see what happens if there is
a filament to cathode short in one of those 25L6s while he is playing!
OUCH!!

 SLMR 2.1a And now doctors, Metaphasic shielding IS a reality - Rega

3750. Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 21:13:14 UTC
From: geret@gov.nt.ca
Message-ID: <1994Dec11.211314.25147@gov.nt.ca>
Source record: 115186

I am building an HF amp 160 to 10 m using an 8877 tube. I am in the final stages of construction and I am a bit unclear about the information that I have been reading in various books about tank circuit design. This uncertainty has been reinforced by the fact that I cannot achieve resonance on any band. I have worked thru all the calculation regarding plate impedance but the coil tap positions that I seem to get to work are far from the calculated ones. I like to correspond with someone who has an intimate understanding of this topic, cuz I obviously don't.
Larry Horlick
VE8HL
geret@inukshuk.gov.nt.ca

3751. Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 21:46:06 UTC
From: mmarmor@pluto.njcc.com
Message-ID: <3cfruu$sir@pluto.njcc.com>
Source record: 115191

I have been using a 10 amp Variac variable transformer to vary the temperature of an inexpensive soldering iron. Does anyone know if this is bad for the heater element in the iron?

I have seen circuits that will cycle 110V on and off at various rates to control iron temperature. Is this a better method of controlling the temperature than varying the voltage or is it simply a less expensive way?

My iron is years old and needs replacing. Can anyone recommend an iron? I am thinking about a good quality pencil type in the 30-40 watt range. Ungar? Weller?

73
Michael, AA2UJ
mmarmor@pluto.njcc.com

3752. Re: Hi power PIN diode switch?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-11 22:40:49 UTC
From: reichert@rtsg.mot.com
Message-ID: <3cfv5h$8db@delphinium.cig.mot.com>
Source record: 115187

In article <3cb9rm$d2r@colossus.holonet.net>,
rohrwerk@orac.holonet.net (John Seboldt) writes:
|> Could somebody help me with construction details for a
|> PIN diode TR switch
|> good for about 200 watts? Especially diode types and
|> availability!
|>
|> The one in my 1988 ARRL Handbook seems a good starting
|> point; just
|> wondering about diode types, other precautions for higher
|> power, etc.
|>
|> John Seboldt K0JD
|> Minneapolis
|>

--
Some good sources of High Power PIN diodes and design info
are;

Unitrode PIN DIODE DESIGNERS' Handbook & Catalog PD-500C
1984
617-861-6540

Frequency Sources Semiconductor Division Catalog
617-256-8101

Microwave Associates Pin Diode Designers Guide
617-272-3000

Ask for their lastest catalogs.

\|/
^ ^
(O O)
___.ooO__U__Ooo.___
Hmmmm...Could Be!
==
| KD9JQ ex KA7IXS,WA8NBD 708-632-6669 Work |
| Charles H. Reichert 708-358-3827 HOME |
| 955 Concord Ln. |
| Hoffman Ests., IL. 60195 reichert@rtsg.mot.com |
==

3753. HT Headset To Mobile

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 02:08:11 UTC
From: plymale@mousetrap.es.vt.edu
Message-ID: <3cgbab$c8l@solaris.cc.vt.edu>
Source record: 115188

I need assistance in connecting an Icom HT headset (HS-51)
to a Yaesu FT-5100 mobile. I do not have the pin definitions
for the HS-51. Any help would be appreciated.

Thanks,
Bill Plymale - KD4CIY

--

William O. Plymale plymale@mousetrap.es.vt.edu 703-231-9530
Virginia Tech Information Systems

3754. Cross for RLS135 diode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 02:14:14 UTC
From: n0dh@comtch.iea.com
Message-ID: <3cgbln$otl@krel.iea.com>
Source record: 115189

Help

I need a cross for a RLS135 diode. It is likely a PIN or Switching type. It has a SMT package but the circuit layout is such I can use a leaded equivalent. These are used in my TS850 to switch the band pass filters and I zapped a couple of em. (long story, will have "Stupid" stenciled on my forehead for a while..ok).

Before I call the bandits at Kenwood Parts thought would try and find a local replacement equivalent, say from NTE or a 2NXXXX

Any help appreaciated
Dave
N0DH/7
Spokane, Wa
n0dh@comtch.iea.com

"The bad news ...life is hard.
The good news...life is short.
The moral...Contest often, Chase DX, eat desert first".

3755. Re: temp dummy load for qrp rig?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 10:57:57 UTC
From: randolph@est.enet.dec.com
Message-ID: <3chs66$mgm@mrnews.mro.dec.com>
Source record: 115196

In article <3cammp$1vm@charm.magnus.acs.ohio-state.edu>,
sbertsch@magnus.acs.ohio-state.edu (Steve Bertsch) writes...
>>Use carbon or metal film resistors.
> ^^^^^^^^^^^^^^^^^^^^
>Don't. Metal film resistors are spiralled or laser helixed during manufacture,
>ie. they're inductive. Stick to lowish value carbon composition.

Actually, lowish value metal films (say, 300 ohm or less) aren't spiral cut, so they make ok resistors at low RF. I actually swept a couple and they didn't get reactive until somewhere between 6m and 2m with 1/2" leads.

-Tom R. N1OOQ randolph@est.enet.dec.com

3756. Fantastic Book Store

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 13:41:49 UTC
From: mack@mails.imed.COM
Message-ID: <9411127872.AA787251256@mails.imed.com>
Source record: 115198

We just had a store called Micro Center open here in Houston, TX. It has the BEST technical bookstore I have ever seen. You will not believe the quality and quantity they have available. Lest you think this is only of benefit to those in SE Texas, they have 11 other stores scattered through the US.

Their selections that I found interesting were primarily DSP and microwave stuff. They had easily 50 or more titles in each category. The stuff is pricey, but give them their due. How many people actually buy such esoteric titles?

Ray Mack
WD5IFS
mack@mails.imed.com

3757. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 14:58:07 UTC
From: rdewan@uhura.cc.rochester.edu
Message-ID: <1994Dec12.145807.13012@galileo.cc.rochester.edu>
Source record: 115194

In <3cfruu$sir@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor) writes:

>I have been using a 10 amp Variac variable transformer to vary the
>temperature of an inexpensive soldering iron. Does anyone know if
>this is bad for the heater element in the iron?
>
>I have seen circuits that will cycle 110V on and off at various
>rates to control iron temperature. Is this a better method of
>controlling the temperature than varying the voltage or is it
>simply a less expensive way?

I have a Weller soldering station - it uses on/off control, keeping
the full voltage (28v ac?). It gets feedback about the tip temperature
from a thermocuple near the tip. The advantage of full voltage with
temperature feed back is that this method the tip heats up very quickly
when cooled such as by soldering. It adds to the effective "thermal mass".
It uses crossing detector swithches to minimize transients. It gets

Rajiv
aa2ui

3758. Re: Litz Wire & Toroids

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 15:07:29 UTC
From: novatech@eskimo.com
Message-ID: <D0pE0n.JD9@eskimo.com>
Source record: 115193

k23690@proffa.cc.tut.fi (Kein{nen Paul) writes:

>To check if skin effect is significant in a particular case, here is a
>simple test. If we by "significant" mean that the resistance has doubled
>from the DC value, this also means that the effective cross area has
>dropped to 50 %. This is equivalent to a copper tube with OD equal to
>the wire diameter and ID = 0.71 OD or a wall thickness of 0.14 OD.

The "proximity effect" is much worse for transformers than the skin
depth effect. Even at 50kHz the losses due to this effect are huge. Ask
switch power supply designers. Good transformer design software
includes this effect. I once designed a transformer putting out
50 watts at 250kHz. Changing from 6 strands of #26 on the primary
to litz of the same cross sectional area of copper, but with 50 strands,
saved 2.5 watts of "copper" loss.

--
Steven D. Swift, P.E. (novatech@eskimo.com)
NOVATECH INSTRUMENTS, INC. 1530 Eastlake Avenue East, Suite 303
206 328 6902, FAX 206 328 6904 Seattle, Washington 98102 USA

3759. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 15:16:01 UTC
From: n0dh@comtch.iea.com
Message-ID: <3chpfh$719@krel.iea.com>
Source record: 115195

Michael Marmor (mmarmor@pluto.njcc.com) wrote:
: I have been using a 10 amp Variac variable transformer to vary the
: temperature of an inexpensive soldering iron. Does anyone know if
: this is bad for the heater element in the iron?
:
: I have seen circuits that will cycle 110V on and off at various
: rates to control iron temperature. Is this a better method of
: controlling the temperature than varying the voltage or is it
: simply a less expensive way?
:
Mike

The variac will only cause your old iron to last even longer!!! The new (and expensive) temperature controlled irons only serve to regulate the temperature of the tip very precisely. In commercial soldering this precise control serves to make consistent high quality solder joints and minimize damage to todays very small circuit traces because of too much heat. If you are doing a lot of very fine PC board and surface mount component soldering you will "enjoy" one of the new irons.

Dave
N0DH/7
Spokane
n0dh@comtch.iea.com

3760. Variac Saves Caps????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 15:30:07 UTC
From: af104@detroit.freenet.org
Message-ID: <3chq9v$7sg@detroit.freenet.org>
Source record: 115192

"Bring up the voltage slowly" is the addage for reforming
electrolytics on vintage gear unused for years.

Anyone know (with some certainty) the right formula for
time vs. voltage on the variac??

That is, 10 volts a day for 15 days?
20 volts per hour for 6 hours?

No kidding, there ought to be some tradeoff between blowing
the caps by being too impatient, and growing old waiting.

Jeff
WB5KZW
--

3761. Re: Value of "Electronics Workbench" by Interactive?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 17:43:10 UTC
From: Darren O'Connor <oconnord@ucsu.Colorado.EDU>
Message-ID: <Pine.OSF.3.91.941212103940.31682C-100000@ucsu.Colorado.EDU>
Source record: 115197

On Fri, 9 Dec 1994, Tom Kreyche wrote:

> I just received a flyer in the mail for "Electronics Workbench" described
> as "The electronics lab in a computer." The product is a analog and digital
> circuit simulator, and is offered by Interactive Image Technologies Ltd.
> The offer is $149 for the current version V3.
>
> Can anyone comment on the program? Is it useful, complete, bug-free?
> Professional or strictly hobbiest tool? Any competitive similar products?
>
> There's a quote in the flyer from M.A. Chapman who says he used it to
> design a 6 meter receiver, article to be published in QST.
>
> Thanks,
>
> Tom KG6YJ
>
>

I've not used the Electronic Workbench, but you can find copies of
PSPICE on the net for free. This is an analog circuit analysis program;
though it lacks a schematic editor (you enter your circuit via node
descriptions), it is very powerful. You can pick up books on how to use
it for around $30. Perhaps someone could post an ftp site that carries
it...I've seen it but not recorded the site.

Darren

3762. Soldering Litz Wire

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 20:53:01 UTC
From: gsymonds@hpb.hwc.ca
Message-ID: <3cid7d$7b@m.ehd.hwc.ca>
Source record: 115201

Does anyone have a sure-fire way to solder fragile conductors such as litz wire and the tinsel braid used on headphones?

Any suggestions welcome.

Gordon Symonds

3763. CB conversions to 10meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-12 21:03:30 UTC
From: weinfurtner@ouvaxa.cats.ohiou.edu
Message-ID: <D0puHu.AEH@oucsace.cs.ohiou.edu>
Source record: 115200

Gary wrote:I have a new RS TRC-465 cb I have never used. I just passed my general test and I would like to convert my cb to somthing useful. Anyone having experiance (good or bad) with such a conversion please let me know. Thanks.

Gary, I've been studying the subject myself and have had success in converting some of these to 10 meters. Some are synthesized and others are xtal switched . I've not tried the TRC-465. Here is a list of the channel/frequency assignments as suggested by Dennis Mudge, WB6PGJ, in a July 1978 QST article:

Channel Freq Channel Freq Channel Freq
1 28.965 15 29.135 29 29.295
2 28.975 16 29.115 30 29.305
3 28.985 17 29.165 31 29.315
4 29.005 18 29.175 32 29.325
5 29.015 19 29.185 33 29.335
6 29.025 20 29.205 34 29.345
7 29.035 21 29.215 35 29.355
8 29.055 22 29.225 36 29.365
9 29.065 23 29.255 37 29.375
10 29.075 24 29.235 38 29.385
11 29.085 25 29.245 39 29.395
12 29.105 26 29.265 40 29.405
13 29.115 27 29.275
14 29.125 28 29.285
13 29.115 27 29.275.
(as you can see, tabs messed up...) chnl1 is 28.965, chnl15 is 29.135, chnl 29 is 29.295. These are exactly 2 megahertz above the 'ol CB Channels, which makes sense. Would be interested to hear from others who have done the same. I try to monitor channel 1 as an indicator of activity. 73 to all de Greg NS8O

3764. Re: Value of "Electronics Workbench" by Interactive?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 01:16:49 UTC
From: torch@netcom.com
Message-ID: <torchD0q681.76K@netcom.com>
Source record: 115202

Darren O'Connor (oconnord@ucsu.Colorado.EDU) wrote:

: On Fri, 9 Dec 1994, Tom Kreyche wrote:

: > I just received a flyer in the mail for "Electronics Workbench" described
: > as "The electronics lab in a computer." The product is a analog and digital
: > circuit simulator, and is offered by Interactive Image Technologies Ltd.
: > The offer is $149 for the current version V3.
: >
: > Can anyone comment on the program? Is it useful, complete, bug-free?
: > Professional or strictly hobbiest tool? Any competitive similar products?
: >
: > There's a quote in the flyer from M.A. Chapman who says he used it to
: > design a 6 meter receiver, article to be published in QST.
: >
: > Thanks,
: >
: > Tom KG6YJ
: >

I've seen the demo; it looks very good, but haven't shelled out yet :->
See if they'll send you a demo disk; its worth it!
T

3765. WANTED: VHF Schematics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 02:14:58 UTC
From: mikew@braindead.sde.dps.loral.com
Message-ID: <3cj032$8s3@lfsgate.lfs.loral.com>
Source record: 115203

Does anyone have or know of a simple schematic for a SIMPLE VHF transcever (crystal controlled could even be one channel maybe 500mw - 1w out). I'd like to build a simple transcever to access a local repeater while rock climbing. I don't want to carry my IC-W2A up a rock. I figure I could build this thing into a tough weather resistant case. ;-) Please e-mail any possible help to the internet address below.

73s, mike

--

"Very funny, Scotty. Now beam down my clothes."

Michael Wilsher, KC5BOD Outside # 301-470-1958
DPS SDE System Admin internet: mwilsher@lfs.loral.com
Beltsville, MD ip net: mikew@braindead.sde.dps.loral.com

3766. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 02:44:01 UTC
From: markm@glock.ramp.com
Message-ID: <3cj1ph$3j3@glock.ramp.com>
Source record: 115204

In article <3cfruu$sir@pluto.njcc.com>,
Michael Marmor <mmarmor@pluto.njcc.com> wrote:
>I have been using a 10 amp Variac variable transformer to vary the
>temperature of an inexpensive soldering iron. Does anyone know if
>this is bad for the heater element in the iron?
> ...

I use a lamp dimmer for the same purpose. The Handbook shows how to wire it in the Construction Practices chapter. Works pretty well and probably cheaper than a Variac. Of course, if you already have the Variac...

I doubt that it hurts the iron any. Matter of fact, I'd guess it would help it, if anything.

73... Mark AA7TA

3767. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 03:34:32 UTC
From: drted@ix.netcom.com
Message-ID: <3cj4o8$mf@ixnews1.ix.netcom.com>
Source record: 115205

In <3cfruu$sir@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor)
writes:

>
>I have been using a 10 amp Variac variable transformer to vary the
>temperature of an inexpensive soldering iron. Does anyone know if
---snip---
>
>My iron is years old and needs replacing. Can anyone recommend an
>iron? I am thinking about a good quality pencil type in the 30-40
>watt range. Ungar? Weller?
>
>73
>Michael, AA2UJ
>mmarmor@pluto.njcc.com
>

Fair Radio Sales is selling a gov't surplus Weller kit for 70.00. These
are temperature controlled tips in the 500, 600, and 700 degree range.
All the parts are still currently available and a comparable kit today
would cost several hundred dollars. I don't have the phone number or
catalog number of the kit handy, but I sure recommend buying it.
Bye... Ted..

3768. 9600 baud packet modem kits?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 13:09:27 UTC
From: billv@olympus.net
Message-ID: <billv.127.000D28BD@olympus.net>
Source record: 115211

Looking for one that doesn't cost an arm and a leg.

3769. Re: Soldering Litz Wire

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 17:05:47 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.787338347@aries>
Source record: 115206

gsymonds@hpb.hwc.ca (Gordon Symonds) writes:

>Does anyone have a sure-fire way to solder fragile conductors such as
>litz wire and the tinsel braid used on headphones?

>Any suggestions welcome.

>Gordon Symonds

In regard to litz wire, we used to heat it to red hot in an open flame and
quickly quench it in a dish of alcohol. The alcohol used to catch on fire
all the time, but the strands came out perfectly bright copper.
Not responsible for disaster caused by the use of this dangerous method.

Chuck Hawley, KE9UW in Urbana, Illinois
hawley@aries.scs.uiuc.edu
School of Chemical Sciences, Electronic Services
University of Illinois, Urbana-Champaign

3770. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 17:27:09 UTC
From: tomb@lsid.hp.com
Message-ID: <D0rF5A.FJB@hpcvsnz.cv.hp.com>
Source record: 115207

Ted Viens (drted@ix.netcom.com) wrote:

: Fair Radio Sales is selling a gov't surplus Weller kit for 70.00. These
: are temperature controlled tips in the 500, 600, and 700 degree range.
: All the parts are still currently available and a comparable kit today
: would cost several hundred dollars. I don't have the phone number or

Hmmm. This seems high, unless they are pretty fancy kits. You can get a new Weller WTCPT station from Newark for about $140. And with the move to surface mount, a lot of old WTCP stations have come onto the surplus market--assembly houses have scrapped them. The one I got 18 years ago is still running fine, and I paid $5 or $10 for it at that time; since then I've gotten a couple more for not more than $5. Things to look for in a used one: the sleeve that holds the tip in should be removeable by hand (not overtightened) and it should slide smoothly off the heating element. If you can plug it in to try it, with a tip in it, after about one minute it should melt solder, and in a couple minutes, it should start cycling: you can hear it click occasionally. The magnetic thermal switch is something that does go out, and it's important to check the one you get to see if it's OK. A quicker test that should work OK too: turn it on with no tip, while holding the end of the barrel near where the tip goes in. It should not get hot. Insert a tip, and it should get noticably hot within 3 or 4 seconds. And inspect the cords, both power and the one to the iron. They should be at least sound, if not clean. Another likely problem is a break (usually intermittent and hard to find) in the cord to the handpiece, and you pretty much have to take your chances with that. If you can get them cheap enough, get two, one for spare parts ;-)

If you get one of these, NEVER tighten the sleeve with pliers; it need only be finger tight. NEVER grab the sleeve in the middle with pliers: you will pinch it down and it's very likely to start binding against the inner barrel. You can get a very wide variety of tips for the Wellers (Newark lists 18 shapes in three temperatures each--600F, 700F and 800F), and with the right tip, the iron is fine for just about any normal ham soldering smaller than what you'd use a torch on. You can even solder fine-pitch surface mount ICs with them, if you are very steady and patient and know the right tricks.

73, K7ITM

3771. Re: Soldering Litz Wire

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 17:31:24 UTC
From: tomb@lsid.hp.com
Message-ID: <D0rFCC.I2t@hpcvsnz.cv.hp.com>
Source record: 115208

Gordon Symonds (gsymonds@hpb.hwc.ca) wrote:
: Does anyone have a sure-fire way to solder fragile conductors such as
: litz wire and the tinsel braid used on headphones?

Usually Litz wire insulation will heat-strip; use an 800F tip/soldering temperature, and hold the end of the wire in some molten solder on the tip. As the insulation starts to strip, feed in a bit more solder/flux. All this is _after_ you've removed any outer fabric insulation.

The tinsel stuff with cotton or other fiber core is probably best done with crimps that keep the core intact, not soldering.

3772. Re: Variac Saves Caps????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 18:10:18 UTC
From: Larry Kenan <larry.kenan@SanDiegoCA.NCR.COM>
Message-ID: <D0rH56.860@lcpd2.SanDiegoCA.NCR.COM>
Source record: 115209

>In article <3chq9v$7sg@detroit.freenet.org> Jeffrey L. Bauman writes:
>
>
>"Bring up the voltage slowly" is the addage for reforming
>electrolytics on vintage gear unused for years.
>
>Anyone know (with some certainty) the right formula for
>time vs. voltage on the variac??
>

I just ramp it up slowly over a couple of minute period
while watching both the voltage and current.
If there is steady but excessive current rise - stop.
You may be able to isolate the problem with resistance measurements.
If you start getting current jumps, back down and try again.
If that doesn't succeed - you have some repairs to do.

3773. Re: Variac Saves Caps????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 18:37:38 UTC
From: STRICK@UGA.CC.UGA.EDU
Message-ID: <1708BBFAA.STRICK@UGA.CC.UGA.EDU>
Source record: 115210

In article <3chq9v$7sg@detroit.freenet.org>
af104@detroit.freenet.org (Jeffrey L. Bauman) writes:

>"Bring up the voltage slowly" is the addage for reforming
>electrolytics on vintage gear unused for years.
> * snip *

Jeff: I use 10 volts every 10 minutes. Absolutely NO certainty
involved whatsoever. No scientific study, no formula. Bet there
are a lot of answers to this one.

Regards,
Strick

3774. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 18:51:37 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <787344697snz@lfheller.demon.co.uk>
Source record: 115215

In article <3cfruu$sir@pluto.njcc.com>
mmarmor@pluto.njcc.com "Michael Marmor" writes:

> I have been using a 10 amp Variac variable transformer to vary the
> temperature of an inexpensive soldering iron. Does anyone know if
> this is bad for the heater element in the iron?
>
> I have seen circuits that will cycle 110V on and off at various
> rates to control iron temperature. Is this a better method of
> controlling the temperature than varying the voltage or is it
> simply a less expensive way?
>
> My iron is years old and needs replacing. Can anyone recommend an
> iron? I am thinking about a good quality pencil type in the 30-40
> watt range. Ungar? Weller?

I've had an Ungar iron for several years and am quite pleased with it.
It doesn't *look* as well made as the Weller irons, but it works OK

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3775. Want Your Broken Icom IC-701

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 21:48:01 UTC
From: dsnowden@ccd.harris.com
Message-ID: <1994Dec13.214801.29573@ccd.harris.com>
Source record: 115212

I am sort of committed to fixing an IC-701 I bought broken. Due to the scarcity (and high price) of parts, I am looking for a junker IC-701. Mine is a junker, but I'd like to fix it. My previous request for a service manual is recinded. I understand from Icom that they never made a service manual.....

73's Doug, N4IJ

--
Doug Snowden
dsnowden@ccd.harris.com

3776. Re: FYI: Modify 6LQ6-base

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-13 22:38:16 UTC
From: dgf@netcom.com
Message-ID: <dgfD0rtJt.KEp@netcom.com>
Source record: 115213

In article <2a6.408.546@acenet.com> brian.carling@acenet.com (Brian Carling) writes:
>Newsgroups: rec.radio.amateur.homebrew
>From: brian.carling@acenet.com
>
>BI>> 73 Dave WB0GAZ dgf@netcom.com
>
>BI>Hey Dave that is a good Idea. One might want to place a 6.3VAC filiment
>BI>transformer in reverse to the 6.3 VAC that was used to power the
>BI>6LQ6's. That would still give you 117AC plus Isolate the 31LQ6's from
>BI>the line.
>
>Yes, that would be a LOT safer!!

After significant flame-count, I amend my posting by suggesting you put
an isolation xfmr in the line to the filaments, or for the whole amp.

73 Dave WB0GAZ dgf@netcom.com

3777. Re: Variac Saves Caps????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 02:04:37 UTC
From: acooney@netcom.com
Message-ID: <acooneyD0s33p.FEH@netcom.com>
Source record: 115216

Jeffrey L. Bauman (af104@detroit.freenet.org) wrote:
: "Bring up the voltage slowly" is the addage for reforming
: electrolytics on vintage gear unused for years.

: Anyone know (with some certainty) the right formula for
: time vs. voltage on the variac??

Although more difficult to implement for most folks, the safest bet would be to monitor cap temperature, and not exceed its design rating. Push it slowly, since transfer of heat to the exterior isn't instantaneous. Alternatively, figure a typical cap the size of your thumb can likely dissipate a watt or two safely, and monitor the current and voltage supplied -- keeping the V*I product below this level.

If you're not in a rush, limit the current with a suitably rated series resistor, and supply the circuit with the cap's rated voltage. Then just wait until the voltage across the cap comes up to the value you're supplying, and let it sit there for a while to be sure.

Other ideas folks?

Cheers,
Alan
WD6DES

3778. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 03:32:53 UTC
From: gull@cyberspace.ORG
Message-ID: <Pine.3.07.9412132244.A1499-a100000@grex.cyberspace.org>
Source record: 115214

>From: mmarmor@pluto.njcc.com (Michael Marmor)
>Subject: Variac to adjust soldering temperature

>I have been using a 10 amp Variac variable transformer to vary the
>temperature of an inexpensive soldering iron. Does anyone know if
>this is bad for the heater element in the iron?

--> It shouldn't be, as long as you're using the Variac to decrease the
temperature, and not to increase it. In fact, running at a lower
temperature is probably easier on the iron.

_ _
__ _ _ _| | | | David Brodbeck Alma, MI
/ _` | | | | | | | Amateur Packet(AX.25): N8SRE@wb4vva.#nemi.mi.usa.na
| (_| | |_| | | | +---
__, |__,_|_|_|_| @ grex.cyberspace.org
|___/

3779. chip Info need

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 14:54:57 UTC
From: freitag@bonsai
Message-ID: <3cn101$jf1@ilex.fernuni-hagen.de>
Source record: 115217

Hi there,

for a ATV Project I need information about the following chips:
U 264 B
TDA 2840
U 343
UAA 2000

very important are pinning layouts and pin description, if these chipa are programmable, I need even Info about this.

Thanks!!

Robert

3780. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 16:42:49 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec14.164249.4739@ke4zv.atl.ga.us>
Source record: 115118

In article <3cfruu$sir@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor) writes:
>I have been using a 10 amp Variac variable transformer to vary the
>temperature of an inexpensive soldering iron. Does anyone know if
>this is bad for the heater element in the iron?

It's not necessarily bad for the heater, but it doesn't regulate
temperature except peripherally, it regulates wattage.

>I have seen circuits that will cycle 110V on and off at various
>rates to control iron temperature. Is this a better method of
>controlling the temperature than varying the voltage or is it
>simply a less expensive way?

This is a better method because it is a *closed loop* servo, even
if it is of bang-bang design. The Variac is an open loop power
controller while the thermostatic tip switch is an actual, if somewhat
crude, closed loop temperature controller.

The ideal soldering iron maintains a constant tip temperature at
all times, whether it is contacting a large heatsinking joint or
a delicate PC board trace. The required heat flow can vary depending
on the job, but the temperature needs to remain constant. The
best way to do this is with proportional closed loop control,
but the bang-bang method, coupled with adequate thermal mass in
the tip, will do an acceptable job if you have a range of tip
sizes to balance the thermal mass to the job at hand.

>My iron is years old and needs replacing. Can anyone recommend an
>iron? I am thinking about a good quality pencil type in the 30-40
>watt range. Ungar? Weller?

Weller is the defacto standard. Some manufacturers use more exotic
methods, one uses an RF heating element, but the good old Weller
WTCPN solder station will still serve for most amateur chores. If
you plan to do a lot of SMD work, a static hot air source will be
better, and an interesting portable one is the Weller Pyropen.
Temperature control is open loop, but you can frequently get away
with that when using the low thermal mass of air as your transfer
medium. Much better would be a closed loop Pace workstation. Couple
that with a B&L long working distance stereoscopic microscope, and
you're set for working on today's HTs. (You can get away with a
jeweller's loop, but you'll singe your nose from time to time,
voice of experience.)

Gary
--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3781. Re: Soldering Litz Wire

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 20:46:36 UTC
From: niemi@astroatc.uucp
Message-ID: <1994Dec14.204636.585@astroatc.uucp>
Source record: 115119

In article <hawley.787338347@aries> hawley@aries.scs.uiuc.edu (Chuck Hawley) writes:
>gsymonds@hpb.hwc.ca (Gordon Symonds) writes:
>
>>Does anyone have a sure-fire way to solder fragile conductors such as
>>litz wire and the tinsel braid used on headphones?
>
>In regard to litz wire, we used to heat it to red hot in an open flame and
>quickly quench it in a dish of alcohol. The alcohol used to catch on fire
>all the time, but the strands came out perfectly bright copper.
>Not responsible for disaster caused by the use of this dangerous method.

I have soldered the tinsel braid by first serving the wire end with a single strand from stranded wire (i.e., wrap a strand about 2 inches long around the final 1/4 inch of the tinsel, cloth and all, in a spiral fashion), then tinning the assembly, finally soldering into place. Solder flux treatment prior to serving may help. Avoid wicking, lest you destroy the marvelous flexibility of the tinsel wire. (The headphone tinsel I worked with has multiple strings of cloth, wrapped with thin, annealed copper foil, and seemed to me similar to litz wire, but flabby/flexible).

Bob Niemi, W9FNJ, Astronautics, Madison, WI niemi%astroatc.uucp@cs.wisc.edu

3782. Sources for Si(SD)8901 & SD5000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 21:08:27 UTC
From: Bill Kirkland <kirkland@bnr.ca>
Message-ID: <3cnmsb$4e6@bmerha64.bnr.ca>
Source record: 115120

Anyone know of any sources for the Si8901 or SD8901 and
the SD5000?

Bill Kirkland
VE3JHU

3783. High Performance HF Receiver/Transmitter Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 21:10:02 UTC
From: Bill Kirkland <kirkland@bnr.ca>
Message-ID: <3cnmva$4e6@bmerha64.bnr.ca>
Source record: 115121

I am interested in talking with anyone working on High Performance
HF Receiver/Transmitter design.

Bill Kirkland
VE3JHU

3784. TUBE SOCKETS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 21:47:01 UTC
From: owens@stout.atd.ucar.edu
Message-ID: <3cnp4l$a25@ncar.ucar.edu>
Source record: 115122

I'm looking for sockets for type 1625 tubes. Someone must have
a few laying around. Any help would be appreciated.

Thanks!

Chip Owens, NW0O
owens@stout.atd.ucar.edu
tel: 303-497-8804

--
Chip Owens (owens@stout.atd.ucar.edu)
NW0O (boatanchors forever!)

3785. Re: Variac Saves Caps????

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 22:28:21 UTC
From: morris@grian.cps.altadena.ca.us
Message-ID: <1994Dec14.222821.12648@grian.cps.altadena.ca.us>
Source record: 115123

>In article <3chq9v$7sg@detroit.freenet.org> Jeffrey L. Bauman writes:
>
>
>"Bring up the voltage slowly" is the addage for reforming
>electrolytics on vintage gear unused for years.
>
>Anyone know (with some certainty) the right formula for
>time vs. voltage on the variac??
>

I first splice a milliameter into the B+ supply, then a fuse (1/2 amp),
just after the rectifier. I then pull all the tubes. Then I turn on the
AC voltage, and ramp up the AC at 10v per minute, while watching the
meter. Really old equipment may get 10 volts per 5 minutes. My wife
jokes that I keep a few old Popular Electronics magazines (the ones with
the classic Carl & Jerry stories) in the shop just for these sessions.
If I see a current spike, or anything but a "bump" while the
voltage is changing, I back it down and let it sit at the lower lever
for a few more minutes. Still, I end up changing out a lot of caps.
On a piece of equipment that I am trying to keep as original as
possible, I'll use this technique. If it's a piece that I am going to
use, like an older Hicock tube tester I picked up recently, or a
Motorola 420mhz RX or TX strip that may be used to link two mountaintops,
I just replace every cap - period.

--
Mike Morris WA6ILQ | All opinions must be my own since nobody pays
PO Box 1130 | me enough to be their mouthpiece...
Arcadia, CA. 91077 |
ICBM: 34.12N, 118.02W | Reply to: morris@grian.cps.altadena.ca.us

3786. Re: Sources for Si(SD)8901 & SD5000

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-14 23:17:30 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <787447050snz@lfheller.demon.co.uk>
Source record: 115124

In article <3cnmsb$4e6@bmerha64.bnr.ca> kirkland@bnr.ca "Bill Kirkland" writes:

> Anyone know of any sources for the Si8901 or SD8901 and
> the SD5000?
>
> Bill Kirkland
> VE3JHU

Pat Hawker, G3VA, in the Sept '93 issue of RadCom, mentions that
the Siliconix Si8901 has been replaced by the identical SD8901,
available from Calogic Corp. Siliconix's UK HQ is just round
the corner from where I work. I'm interested in these devices
so I'll make some enquiries and let you know what transpires.
Pat mentions that the SD5000 is "more widely available".

Siliconix here in the UK seems to have transmogrified into
Temic, if that helps.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

3787. Wierd energy device on WWW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 00:34:51 UTC
From: billb@eskimo.com
Message-ID: <D0ttM9.AGJ@eskimo.com>
Source record: 115125

The Anomolous Science guys on the Keelynet BBS have just made public
a device which seems to be giving more energy out than in. The
plans are on my web page at http://www.eskimo.com/~billb, if anyone
here wants to have a go at replicating the experiment.

It involves a ssimple transformer wound around a ceramic magnet, with
a large piezo block in series, all run at around 10KHz (sine.) They
say the load resistor on the rectified output puts out more energy
than the oscillator supplies to the resonant circuit. Pretty incredible!

--
.....................uuuu / oo \ uuuu........,.............................
William Beaty voice:206-781-3320 bbs:206-789-0775 cserv:71241,3623
EE/Programmer/Science exhibit designer http://www.eskimo.com/~billb/
Seattle, WA 98117 billb@eskimo.com SCIENCE HOBBYIST web page

3788. Electronics Guru: Remote RF Control: How?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 05:02:10 UTC
From: jbrookes@ccnet.com
Message-ID: <3coiki$310@ccnet.ccnet.com>
Source record: 115126

I am trying to control a machine remotely. Desire 8 different signals and
good resistance to false triggering. I want to shut off valves remotely.
I thought of model airplane controllers, but noise reeistance probably
isn't very good.
Please email me direct with ideas.
Thanks in advance.
John B.

3789. ### Looking for Mods/service manual for Standard HT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 05:05:32 UTC
From: s2202629@np.ac.sg
Message-ID: <3coiqs$e5m@nova.np.ac.sg>
Source record: 115127
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.swap

I'm looking for mods for Standard HTs, the C1xx models. I've seen mods around for C5xx and above, but don't seem to find any for the 'simplier' models.

Preferably, for the C150. It's very similar to the C158A, but this unit has no out of band rec (I believe it's only 144-148 or something like that). Or a service manual for this model.

Would appericiate pointers, ftp sites, etc. Please reply via email.

Thanks.

3790. PCB design software question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 13:54:40 UTC
From: P06288@email.mot.com
Message-ID: <1994Dec15.135440.13392@schbbs.mot.com>
Source record: 115128

Anyone have any good recommendations on a PCB software package that works for small projects? I have PADS but would like to compare it to something simpler or something that has more capability. Anyone have the full up manual for PADS or a site where I can get it?

Thanks in advance.

Jim

3791. MC4136

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 15:33:44 UTC
From: jcarter@orl.mmc.com
Message-ID: <3cpnko$dls@theopolis.orl.mmc.com>
Source record: 115129

Can someone email me the pinout of a MC4136 quad OP-AMP.

Thanks

Jim

\/\/ * \/ _._. __._ /\/\/ | James A. Carter (Jim) | jcarter@orl.mmc.com |
/|\ | Senior Software Engineer |_____|
/\|/\ K D 4 P O N | Martin Marietta | These views are my own |
/\/|\/\ ORLANDO | Mail Point 138 | and not that of my |
/\/\|/\/\ FLORIDA USA | 5600 Sand Lake Road | employer. |
/\/\/|\/\/_____| Orlando, FL 32819-8907 |_____73's_Jim ____|

3792. Re: FYI: Modify 6LQ6-based HF

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 18:04:58 UTC
From: smiller@motown.ge.com
Message-ID: <3cq0ga$lgm@cnn.MOTOWN.GE.COM>
Source record: 115130

I think I might make this mod in this fashion: I would install an extra transformer with a 24 volt secondary. Wire the secondary in series with the 6.3 volt filament winding-this will get you almost 31 volts (and considering where the line voltage runs these days it will probably get you over 31 volts). This keeps you isolated from the AC mains which should reduce the TVI and eliminate the safety problems that might develop with the configuration you have.

3793. DSP Phase Shifter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 19:03:11 UTC
From: clarke@acme.ist.ucf.edu
Message-ID: <3cq3tf$5sd@news.cc.ucf.edu>
Source record: 115131

I'm getting interested in amateur radio after a hiatus of
quite a few years. Unfortunately(?) I find myself being
distracted by the problems of building equipment just like I
was years ago, and neglecting to study the code :-(

At any rate, I always liked the phasing-type SSB generators.
There was something elegant about them. I even came across
the 90-degree phase shift function in some theory courses,
where it is known as a Hilbert transform. This amused me,
the old Miller phase shift networks are really Hilbert transformers.

My question is, are there any DSP chips or chipsets that have
been developed to accomplish the 90-deg phase shift or Hilbert
transform? The NeXT I am typing this on has a DSP56000 and
A/D and D/A so with a little (?) programming it could perform
a 90-deg phase shift (on a voice signal anyway). Nowadays,
it would take a half dozen chips or so to make a dedicated DSP
phase shifter. Is there such a beast commercially available?

Tom Clarke
(Still studying the code after all these years)

3794. Re: Convert RS TRC-465 CB to 10 Meters?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-15 21:55:20 UTC
From: wells@fc.hp.com
Message-ID: <3cqe08$mfj@tadpole.fc.hp.com>
Source record: 115132

Gary (garypewitt@delphi.com) wrote:
: I have a new RS TRC-465 cb I have never used. I just passed my general
: test and I would like to convert my cb to somthing useful. Anyone
: having experiance (good or bad) with such a conversion please let me know.
: Thanks.

Some convert ~ok~ some convert real Fine Business and others won't
convert worth beans.....

The easiest to convert are the types that have a timebase crystal, master
offset crystal, and an rx offset crystal. Simply replacing the master offset
crystal will put the rig on the right band with a little tuning.

The first thing to do is to order a schematic from Radio Shack and figure
out how the rig synthesizes the local oscilator signals needed for tx and rx.

This is the best place to start if you are doing it from scratch otherwise
there are publications around that have generic and specific mods for convert-
ing various CBs.

John in the Fort

3795. Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 02:05:25 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941216164537232@posnet.co.uk>
Source record: 115135

In a message of 11 Dec 94 Larry Horlick wrote to All:

LH> I am building an HF amp 160 to 10 m using an 8877 tube. I am in the
LH> final stage Larry Horlick
LH> VE8HL

Oh Larry! A 8877 for HF! What a waste! 8877s make beautiful 2 metre amplifiers, great for DX modes. But HF...

Regards Paul G4DCV. Internet : paul.whatton@sharpbbs.centron.com ... Amiga Amateur Radio User Group. Free Membership. Netmail me for details.
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3796. Help - Building CW Decoder

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 13:05:14 UTC
From: jtesta@freenet.columbus.oh.us
Message-ID: <3cs3aa$71h@acme.freenet.columbus.oh.us>
Source record: 115136
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hi, I purchased a back issue (apr '94) of Shortwave Magazine. It had
a project to build a CW decoder. I am a newbie at reading schematics and
the only thing i have built to far is a practice code oscillitor.

Anyway on reading the article, i get the drift of it all except for the
following:
1. on page 26, What is SK1, SK2, SK3?

2. How do I connect it up to my computer? I realize it must be via
RS232 port either 9 or 25 pin but which pins? (i have both
so either is ok).

3. and the negative pole of the battery gets connected to ground?

4. The article says the relay is s.p. d.i.l , I got the sp
single pole but what is the dil?

5. What might be a good source in the US for the relay and the IC
NE567?

Thanx in advance.

Joe, n8xct

--
Joseph S. Testa (no not the Franklin County, OH auditor)
This is in hex for YOUR benefit.
54 68 65 20 65 76 65 72 2D 74 68 69 6E 6B 69 6E 67 0A
50 72 6F 67 72 61 6D 6D 65 72 0A

3797. IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 14:30:19 UTC
From: jdc@cci.com
Message-ID: <D0wqyK.3JA@sunsrvr6.cci.com>
Source record: 115137

I recently ran across a data sheet for the Motorola MRFIC2001 and
some other related parts. They are transmit and receive mixers
on a single chip.

Are single chip mixers like these better than a SRA-1 with added
amplification to make up for the SRA-1's losses?

Also, the 2001 series are made to work from 500 mhz to 1 gig or so.
Are there any similar chips suitable for 50, 144 and 220 mhz?

73...Jim N2VNO

3798. Re: PCB design software question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 15:52:26 UTC
From: riyadth@boi.hp.com
Message-ID: <D0wurF.HLy@boi.hp.com>
Source record: 115138

In article <1994Dec15.135440.13392@schbbs.mot.com>,
Jim Gerwitz(N7QHK) <P06288@email.mot.com> wrote:
> Anyone have any good recommendations on a PCB software package that
> works for small projects?

Excellent question, one that I have been asking myself recently. A friend
and I are trying to build some boards and have been trying various packages.
To date I have come across the following:

Circad
PADS
EasyTrax
DCCad
Proteus
Lasi Cad
Tango
Circuit Cad
Protel Easytrax

Several of these are available as demos on the internet. Check out
ftp.ee.ualberta.ca, and oak.oakland.edu. Some are only board layout, some
only schematic capture, and a few have both features. Some are freeware,
shareware, and commercial-ware.

I personally have been using the Circad demo available on CompuServe
(v3.67b) in the HAMNET forum and enjoy it very much. Much more than the
old version of Orcadd we used in school. Last night, in a span of 3
hours, I was able to define a new component (a smart charger chip),
enter the schematic, and layout & auto-route the board. It still needs
work, but not bad for first time use of a product (in my opinion).

I did contact Holophase, the company that produces Circad, and asked
several questions. They have a special price for Hams, unfortunately
still steep at $295. The commercial version costs $995. The demo is
quite usable, however. Particularly for small projects. It is only
limited in that it can't save large boards/schematics (>16k), and doesn't
include the full set of parts libraries. It can import from various
other formats (Tango, Orcadd, AutoCad, etc).

My friend has been using PADS, and (although I haven't used it) I find
the interface to be rather clunky. I have a few more programs that I
downloaded (in the list above), but have not yet tried.

I would appreciate any pointers as to a good package to use.

-Riyadth Al-Kazily
riyadth@boi.hp.com

```
--
-- Riyadth Al-Kazily Hewlett-Packard Advanced LaserJet Operation --
-- riyadth@boi.hp.com (208) 396-4987 Boise, Idaho KB7YWE DoD #295 --
```

3799. Re: Wierd energy device on WWW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 16:43:35 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3csg3n$10so@info4.rus.uni-stuttgart.de>
Source record: 115139

In article <D0ttM9.AGJ@eskimo.com>, William Beaty <billb@eskimo.com> wrote:
>The Anomolous Science guys on the Keelynet BBS have just made public
>a device which seems to be giving more energy out than in

Has the Internet done you any harm, or why are you waisting bandwidth
with nonsense?

3800. Re: Fantastic Book Store

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 16:52:24 UTC
From: landisj@nad.com
Message-ID: <1994Dec16.115224.224@nad.com>
Source record: 115140

In article <9411127872.AA787251256@mails.imed.com>, mack@mails.imed.COM writes:
> We just had a store called Micro Center open here in Houston, TX. It has the
> BEST technical bookstore I have ever seen. You will not believe the quality and
> quantity they have available. Lest you think this is only of benefit to those
> in SE Texas, they have 11 other stores scattered through the US.
>
> Their selections that I found interesting were primarily DSP and microwave
> stuff. They had easily 50 or more titles in each category. The stuff is
> pricey, but give them their due. How many people actually buy such esoteric
> titles?
>
> Ray Mack
> WD5IFS
> mack@mails.imed.com

Yes, Micro Center also has a store outside of Philly in St. Davids, PA.
They have a fantastic technical book section. You would expect a lot on
PC/unix/networks etc, but the textbooks on RF design, mobile comm. systems
engineering, semiconductors... really surprised me.

Joe - AA3GN
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@nad.com | uupsi5!main03!landisj | Ax25: AA3GN@WA3TSW.#EPA.PA.USA.NOAM

3801. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 17:02:04 UTC
From: landisj@nad.com
Message-ID: <1994Dec16.120205.225@nad.com>
Source record: 115141

In article <3cj4o8$mf@ixnews1.ix.netcom.com>, drted@ix.netcom.com (Ted Viens) writes:
> In <3cfruu$sir@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor)
> writes:
>
>>
>>I have been using a 10 amp Variac variable transformer to vary the
>>temperature of an inexpensive soldering iron. Does anyone know if
> ---snip---
>>
>>My iron is years old and needs replacing. Can anyone recommend an
>>iron? I am thinking about a good quality pencil type in the 30-40
>>watt range. Ungar? Weller?
>>
>>73
>>Michael, AA2UJ
>>mmarmor@pluto.njcc.com
>>
>
> Fair Radio Sales is selling a gov't surplus Weller kit for 70.00. These
> are temperature controlled tips in the 500, 600, and 700 degree range.
> All the parts are still currently available and a comparable kit today
> would cost several hundred dollars. I don't have the phone number or
> catalog number of the kit handy, but I sure recommend buying it.
> Bye... Ted..
>

I own two of these, I think they are the TCP-L model. They are 60 watt temp controlled irons, with interchangable tips. With the small tips, you can do delicate work on dips. Using my large chisel tip, they will easily solder PL259's, copper flashing for 10Ghz horns, and hobby brass enclosures.
I got them from from a company that I used to work for when they went under. I have considered selling the 2nd unit, but with my luck, the other would die. I will NOT do without one of them. IMHO, they are the only way to go.

I also own a 25w Ungar and of course an antique Weller Gun. I also own a big old American Beauty (?). They all just gather dust. I use the 2 tempco Wellers for everything.

Joe - AA3GN
--
Joe Landis - Systems and Network Manager - North American Drager - Telford, PA
landisj@nad.com | uupsi5!main03!landisj | Ax25: AA3GN@WA3TSW.#EPA.PA.USA.NOAM

3802. Re: Value of "Electronics Workbench" by Interactive?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-16 17:52:00 UTC
From: brunelli_pc@delphi.com
Message-ID: <xg+1fYA.brunelli_pc@delphi.com>
Source record: 115142

<torch@netcom.com> writes:

>: > Can anyone comment on the program? Is it useful, complete, bug-free?
>: > Professional or strictly hobbiest tool? Any competitive similar products?

Tom,

I ahve used Electronics Workbench for over a year and i like it
very much. Ther version i use is the 1.0 (?) and it is nice for
running quick "let's see" circuits. I know that the upgrade should
have more IC's and goodies. The first version was good for students
and for learning.

Before you open da wallet, get a list of the components available in
the 149 buck package. This should tell you how useful it is for
your application. I found that the lack of ICs and specific xistors
was a drawback.

btw, i have asccess tpo this package because my dad, n1ryo, was using
it in the classroom. he is an electronics instructor and felt that
it was faster and more flexible than a breadboard for examples of
common circuits. But, he does not use it exclusively, it is more of an
adjunct to traditional construction.

gl om

pete brunelli
n1qdq

3803. DSP Phase Shifter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 03:29:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.467.546@acenet.com>
Source record: 115143

From: brian.carling@acenet.com
Newsgroups: rec.radio.amateur.homebrew

TC>I'm getting interested in amateur radio after a hiatus of
TC>quite a few years. Unfortunately(?) I find myself being
TC>distracted by the problems of building equipment just like I
TC>was years ago, and neglecting to study the code :-(

TC>At any rate, I always liked the phasing-type SSB generators.
TC>There was something elegant about them. I even came across
TC>the 90-degree phase shift function in some theory courses,
TC>where it is known as a Hilbert transform. This amused me,
TC>the old Miller phase shift networks are really Hilbert transformers.

TC>My question is, are there any DSP chips or chipsets that have
TC>been developed to accomplish the 90-deg phase shift or Hilbert
TC>transform? The NeXT I am typing this on has a DSP56000 and
TC>A/D and D/A so with a little (?) programming it could perform
TC>a 90-deg phase shift (on a voice signal anyway). Nowadays,
TC>it would take a half dozen chips or so to make a dedicated DSP
TC>phase shifter. Is there such a beast commercially available?

Hello Tom - actually yes, there is a company that sells a
kit form SSb transceiver that uses a phasing circuit to develop the SSB.
It is available from KANGA US c/o N8ET

Do you want the address?
73 - AF4K
brian.carling@acenet.com

• SLMR 2.1a • California does have it's faults...

3804. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 06:08:05 UTC
From: lascal@cortez.its.rpi.edu
Message-ID: <3ctv86$mum@usenet.rpi.edu>
Source record: 115149

James D. Cronin (jdc@cci.com) wrote:

: Are single chip mixers like these better than a SRA-1 with added
: amplification to make up for the SRA-1's losses?

I think you're on the right track... they are active devices with some RF "glue" all in one chip. I think that if you looked at the specs (dynamic range, maybe port isolation, etc) you would see that these "crunch" i.e. overload much before an SRA-1. I don't have a data-sheet, but I've considered using one of the bajillion new mixer/transceiver chips out there for a ham design, and found that they all kinda suck for strong signal handling. We've got lots of paging, cellular, and ham activity around here (where don't ya?).... I want a receiver that will work :-) ... especially on the mountaintops.

: Also, the 2001 series are made to work from 500 mhz to 1 gig or so.
: Are there any similar chips suitable for 50, 144 and 220 mhz?

I think there might be some... for instance the NE602 active amplifier/mixer/oscillator (i.e. a complete down/up converter) I believe is made to cover HF through UHF... I forgot the exact specs.

Be very careful to check the strong signal specs (third order intercept point, one db compression point) if you use any of these IC mixers in receivers/ rx converters.

From what I've seen, these suckers are made to be used in consumer (high volume, cheap) devices, that's why they often don't meet "ham" specs. A MMIC before an SBL-1 for instance would be a good cost/performance tradeoff for the HF through 500 mhz range. The sbl-1 costs about $5 and has about 6db of insertion loss, and needs 5 milliwatts of LO drive. Most mmics cost less than $3 and have 15-20 db of gain (MAR-6 has about 20 db of gain at these frequencies, has a 2.8 db noise figure, and has a 1db compression point of a milliwatt or so... not great, but not horrible).

-Lance

p.s. From MT. Greylock, we use a RX mixer on 2m that requires a 200 mw of LO drive (RAY-2 or something like that)... I don't know when it crunches, but certainly the IF radio is going squirrelly much before it's the problem.

--
Lance Lascari <Amateur Radio: WS2B> <lascal@rpi.edu> Senior EE @ Rensselaer
http://www.rpi.edu/~lascal/
Mount Greylock Expeditionary Farce (W2SZ/1) Secret agent #52,342

3805. Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 17:14:24 UTC
From: "E.Colli strnd" <73143.2036@CompuServe.COM>
Message-ID: <3cv69g$4ms$1@mhadf.production.compuserve.com>
Source record: 115150
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

I am interested in constructing a radio broadcast set with enough power to reach a 10-14 mile radius. I would like to be able to use a CD player with it, and possible a harmonizer. Does anybody have any plans for such a thing using parts from radia shack?

E. Colli

--
--E.Colli Strnd

3806. Bipolar Transistor Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 17:50:07 UTC
From: starin@netcom.com
Message-ID: <starinD0yuvJ.4tB@netcom.com>
Source record: 115152

I am confused about bi-polar transistor circuits. In the designs that I have seen these devices are supposed to act as switches, turning on and off other components, for example relays, etc. My question is this, if a matrix of bi-polar transistors (or even one, for that matter) can pass a much larger current when the base of the transistor is charged by a small current, why are these transistors turning on and off relays? Why can't the transistor itself act as a relay switch?

This has been nagging at me for some time, and I would appreciate it if one or several of the gurus in this group could please answer this most basic question. Personal e-mail preferred. Thanks.I am confused about bi-polar transistor circuits. In the designs that I
have seen these devices are supposed to act as switches, turning on and off other components, for example relays, etc. My question is this, if a matrix of bi-polar transistors (or even one, for that matter) can pass a much larger current when the base of the transistor is charged by a small current, why are these transistors turning on and off relays? Why can't the transistor itself act as a relay switch?

This has been nagging at me for some time, and I would appreciate it if one or several of the gurus in this group could please answer this most basic question. Personal e-mail preferred. Thanks.

--
Jeffrey
{New York}

3807. PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 18:07:56 UTC
From: jeffery@uspto.gov
Message-ID: <3cv9ds$5dr@pioneer.uspto.gov>
Source record: 115144

I have a Yaesu FT-990 located near my PC in my ham shack and am getting some interference from the PC in the radio. I discovered that the monitor is contributing some interference by turning off the monitor.

I've tried putting ferrite filters on the monitor, data, and power cables for the PC but to no avail. I even tried shielding the PC but that didn't help either!

Does anyone have any suggestions for me on this problem? I checked the ARRL Handbook and while there is an entire chapter on RFI, it is primarily focused on TVI and not PC-to-radio interference.

Any help an suggestions are greatly appreciated!!

73,

Jack Jeffery, KB4CG

3808. Auto Id'er for sale. - A happy customer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 18:57:16 UTC
From: ko4ta@mindspring.com
Message-ID: <ko4ta.44.003880CC@mindspring.com>
Source record: 115154

You know I hate it when you have to keep up with the time to ID on the radio. The FCC requires that we ID every 10 minutes and at the end of the transmission. If we don't we are subject to a fine by the FCC, which well we should be.

I hate to admit it but I probably have missed an ID or two. Not any more though with my K4DPK ID'er. I purchase an automatic IDer from Phil Chamblee in Rome, Ga.

This thing comes in a package about the size of a pack of cigarettes. It connects to the rig and will either work on VOX or PTT. You can record an audio message in the DVR circuit and it will play that audio message every 10 minutes or whatever time you set it to. It is really slick.

Now if I want to I can set it to just buzz every 10 minutes and I can do my own ID. I think this thing is really swift. As I attempted to build one and found it alot more difficult that I had supposed. I used over 30 dollars worth of parts and never really came up with what I wanted.

Phil Chambley K4DPK is a amateur radio operator who had heart surgery a few years back that went really bad. He is now retired and doing pretty well physically. However he will never be able to work a regular job again.

This post is not intended to be a commercial message. It is simply an attempt to help two groups of people. The people looking for an Id'er and the guy I know who sells a really good one and can supply the need.

I am in no way affiliated with Phil Chamblee other than a guy he has helped with several projects. I consider him my friend as I hope he does me. Please if you call him be nice. Tell him you saw this post.

His name is :

Phil Chambley
28 East Camilia Rd. NE
Rome, Ga. 30161
(706) 232-4618

73 es God Bless de KO4TA

Sincerely Don Simpson

3809. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 19:33:37 UTC
From: jbhoward@email.unc.edu
Message-ID: <3cveeh$puq@bigblue.oit.unc.edu>
Source record: 115145
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

In article <3cv69g$4ms$1@mhadf.production.compuserve.com>,
E.Colli strnd <73143.2036@CompuServe.COM> wrote:
> I am interested in constructing a radio broadcast set with
>enough power to reach a 10-14 mile radius. I would like to be
>able to use a CD player with it, and possible a harmonizer. Does
>anybody have any plans for such a thing using parts from radia
>shack?

Ok, who wants to be the first to point out the reason I can
tell this guy just finished watching Pump Up the Volume?

Comon. It's so *easy* to pick out. One little detail.

-James

3810. Recommended soldering irons (was Re: Variac to adjust...)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 21:03:47 UTC
From: mjsilva@ix.netcom.com
Message-ID: <3cvjnj$5kb@ixnews2.ix.netcom.com>
Source record: 115146

In <1994Dec16.120205.225@nad.com> landisj@nad.com (Joe Landis - Systems & Network Mgr) writes:

>
>In article <3cj4o8$mf@ixnews1.ix.netcom.com>, drted@ix.netcom.com (Ted Viens) writes:
>> In <3cfruu$sir@pluto.njcc.com> mmarmor@pluto.njcc.com (Michael Marmor)
>> writes:
>>
>>>
>>>I have been using a 10 amp Variac variable transformer to vary the
>>>temperature of an inexpensive soldering iron. Does anyone know if
>> ---snip---
>>>
>>>My iron is years old and needs replacing. Can anyone recommend an
>>>iron? I am thinking about a good quality pencil type in the 30-40
>>>watt range. Ungar? Weller?
>>>
>>>73
>>>Michael, AA2UJ
>>>mmarmor@pluto.njcc.com
>>>
>>
>> Fair Radio Sales is selling a gov't surplus Weller kit for 70.00. These
>> are temperature controlled tips in the 500, 600, and 700 degree range.
>> All the parts are still currently available and a comparable kit today
>> would cost several hundred dollars. I don't have the phone number or
>> catalog number of the kit handy, but I sure recommend buying it.
>> Bye... Ted..
>>
>
>I own two of these, I think they are the TCP-L model. They are 60 watt temp
>controlled irons, with interchangable tips. With the small tips, you can do
>delicate work on dips. Using my large chisel tip, they will easily solder
>PL259's, copper flashing for 10Ghz horns, and hobby brass enclosures.
>I got them from from a company that I used to work for when they went
>under. I have considered selling the 2nd unit, but with my luck, the

other
>would die. I will NOT do without one of them. IMHO, they are the only way to
>go.
>
>I also own a 25w Ungar and of course an antique Weller Gun. I also own a big
>old American Beauty (?). They all just gather dust. I use the 2 tempco Wellers
>for everything.
>
In the last few years I have really come to like the HAKO 926. It's got variable temp. control, and some nice features, like ability to mount iron on either side of holder, and a nice big sponge. I've seen them in catalogs (MTM?) for about $90, and that was after I bought one for home use at full retail!

Mike, KK6GM

3811. Yaesu Band Data output connector interface details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-17 23:59:02 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <D0zByF.6Ez@wb6hqk.ampr.org>
Source record: 115147
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

I'm looking for a description of the Band Data output on Yaesu HF
xcvrs (FT-990 in particular). I have looked in the manual and all
I can glean is that it's a parallel output from the onboard
microprocessor but not the actual coding. I would appreciate a description
or reference on the output coding.

Thanks,

bart wb6hqk

bart@wb6hqk.ampr.org

3812. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 00:55:06 UTC
From: pz12235@eehpx50
Message-ID: <3d019a$l0l@vixen.cso.uiuc.edu>
Source record: 115148
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

E.Colli strnd <73143.2036@CompuServe.COM> writes:

>E. Colli

It's E. Coli.

--
*** Paul Zaremba, Transdimensional Mindways, Inc ***
Urbana, IL
State College, PA
RF Devices, Photonics, SCoPTiC, AL/TENS, Alternative Devices and more....

3813. help Nat Semi App Note #290

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 03:50:45 UTC
From: urgb1@pool.info.sunyit.edu
Message-ID: <1994Dec18.035045.27122@pool.info.sunyit.edu>
Source record: 115155

In the National Semiconductors application note #290 describes a UHF remote control receiver (pg. 4 fig. 8). As described in the app note if you have a very narrow pulse across R9 it should work (and it did... for abt 15 min)

How does this superregenerative circuit work? What does each component do? What components are responsible for the feedback? for the 200-400 kHz pulse? (Any good tutorials on superregen ?)

Any help would be appreciated. If possible pse respond to urgb1@sunyit.edu

I should be here.

P.S. Anybody know a good value for the unlabeled resistor located above C2\ in figure * of app note?

Tnx Bob KA2GWR urgb1@sunyit.edu

3814. BOATANCHORS philosophy and enjoyment

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 04:49:02 UTC
From: samodena@csemail.cropsci.ncsu.edu
Message-ID: <3d0evu$nc4@taco.cc.ncsu.edu>
Source record: 115157
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.antiques.radio+phono

```
Archive BOATANCHORS, file faq.
Part 1/1, total size 37513 bytes:

------------------------------ Cut here ------------------------------
"Boatanchors" FAQ
FAQ Maintainer: John Brewer
brewer@anarky.enet.dec.com
-----------------------------------

Index: * Why boatanchors?
* What is a "Boatanchor"?
* Where can I find one?
* What type of boatanchor should I get?
* Boatanchor Safety
* Boatanchor restoration.
* Where to get parts? ("are tubes hard to find")
* Where can I find more information?
* Where and how do hams operate boatanchor transmitters?
* Typical boatanchors and prices.

Why boatanchors?
----------------

Some may question the desire for 80 pound receivers and
100 pound transmitters, both with filaments sitting there
getting hot and wasting power in this day of microprocessor
based, mega-memoried miniaturized transceivers! Although
modern radios are extremely good at what they are designed
to do, they are about as interesting to operate as a
toaster oven. They have no soul.

Additionally, many find a zen-like feeling in taking an
old, misused ratty old radio and carefully restoring it
back to health. Like cars of the era, boatanchor radios
were made to be worked on, modified, and tinkered with.
Many think of it as Real Radio in this era where fixing
a transceiver is accomplished by boxing it up to send to
the manufacturer for a custom VLSI chip replacement.
Indeed, a warm soldering iron is almost a requirement
for operating a vintage station.

Others claim that boatanchors SOUND better than their
silicon descendents, and this is generlly true. The
audio from a Hammarlund or National receiver, or a
```

Johnson transmitter can sound much better than the
300mW audio coming out of the 2" speaker in the
typical transceiver.

Watching the flicker of 807 modulators in a Viking I
as you speak into a D104 mic, is certainly more stirring
on a winter night than considering hole and electron
flow.

If truth be known, much, if not all of the above although
true, are merely justification for the insatible hunt
for more and more of these old boxes, simply because they
are just too NEAT to have and operate!

What is a boatanchor radio?

Although there are different interpretations of this
term, generally any radio that is "hollow state" or
tube-type is considered a boatanchor. Units produced
from WWII until the mid 60's are probably the most
popular examples of the genre. The origin of the
term "boatanchor" becomes self-evident after carrying
a DX100 (a classic anchor) to your car and noticing
how much longer your arms have become.

Boatanchors may be transmitters or receivers... and
no 'anchor station is complete without an assortment
of like-aged station accessories like microphones,
Transmit/Receive relays, vintage SWR bridges and
so on. All of these items are valid subject matter
for the boatanchor mailing list.

Where can I find a boatanchor radio?

The best way to find a boatanchor is to let other hams in
your area know you are interested in them. Often times
I have been given a boatanchor, because the former owner
has relegated it to the garage or basement. This is also
the cheapest method. When attending a hamfest, ask some
of the sellers if they have any for sale. Often times
sellers won't bring such stuff, as it is HEAVY and is
perceived as not being sellable. Look under the tables,
and in the back of the sellers displays for them! While
you are under the tables rummage thru the boxes of parts
found under there for parts that will come in handy restoring
your new-old treasure. Tubes, high voltage caps, vintage
microphones and connectors may be found lurking here!

If you are in a hurry (and have money) ads in Electric
Radio magazine (see bibliography), the Ham Trader Yellow Sheets,
or your local packet BBS are good places to look. Expect to

pay more through these outlets. Also expect to become an expert in UPS shipping rules. Boatanchors are heavy, and often the cost of shipping one can exceed the cost of the entire unit.

What type of Boatanchor should I get?

This is a question that has as many answers as there are individuals. Generally, as a "starter" boatanchor, 50's vintage gear is probably the best way to go. Radios in this era are quite desirable, but often times won't require extensive surgery to get repaired and on the air.
A radio from a well-known manufacturer is also a good choice... for receivers, look for Collins, Hammarlund, Hallicrafters, and National are all good radios. In the transmitter space, Collins, E.F. Johnson, and Heathkit (with certain reservations) will do well.

Transmitters with plate modulated AM are the more desirable units. Prices will generally reflect this.

Good "starter" transmitters include, but are not limited to:

Johnson: Ranger I or II/Viking I or II/ Valiant/500
Collins: Any 32V series.
Heath: Apache, DX100A or B
(my AM bias is showing!)

"starter" receivers include:

National 183/183D, HRO60 and MANY others
Hallicrafters: Many SX series.
Hammarlund: HQ129, HQ150/160/170/180, Super Pro series, many others.
Collins: any 75A series.

By "starter" radio, I do not mean to indicate the cheapest! Most of these radios would also be on the "best" list. I selected these as they _are_ some of the best, and when one is starting anything, it is good to get the BEST stuff available, rather than getting junk and getting discouraged with it. There will be enough to learn (or remember!) without having to compensate for marginal equipment (was that 'Peak the plate and dip the grid, or the other way around??')! Any radio from this list will do the job for some time, and make operating a pleasure.

Boatanchor Safety

This is a genuine concern! Boatanchor have Real Voltage present in them! Lethal voltages. You will find that capacitors really DO store charge! None of this wimpy 12 volt stuff!

Get back in the habit of discharging any capacitors that
are lurking under the hood. Keep one hand in your pocket
when working on a hot radio. Be REAL careful and THINK THINK
THINK before twiddling with a boatanchor that must be
powered up and worked on.

It is SO easy to get used to working on solid state equipment
and not worrying about Real Voltages... don't do this!

Also, many older radios are not fused... receivers are good
examples of these. I generally replace the line cord
(they usually need it anyway) and either put an in-line
fuseholder, or some of the Heath-type fused plugs in the
radio. Better still, replace the 2-wire plugs with a more
modern 3 wire plug. Barring that, ensure that you strap
every cabinet with healthy sized cable, to a common
station ground. This will prevent _you_ from becoming the
cable between two pieces of gear at different cabinet potentials.

Fires are nice to have burning on winter evenings
but not when they are on top of your operating desk.

Speaking of operating desks, you will become good at carpentry
if you spend much time as a boatanchor operator. You will
quickly discover that the table you used to operate your
tranceiver is way too small, and waaayyyy too wimpy to support
a growing boatanchor station!

Boatanchor Restoration

This subject could easily fill many pages. Below are just some
common topics. The Mailing List is a good place to ask
about other issues. Remember the radio that stares at you from
your bench is old. There are not many around. Take that into
consideration as you proceed through the process. If you
erase the dial marking on your receiver by cleaning it
with Windex, you likely will not find another at Radio Shack.
Take your time and enjoy. The journey to a working boatanchor,
like life, is the _point_ not a process. You will say less
nasty words if you take your time.

[does someone have Jim lockwoods memo about bathing radios?]
[I'll add my $.02 about NOT bathing radios!]

Some general restoration tips:

* Power up old radios gently. Plugging it into the wall and
turning it on is not gentle! Bringing it up slowly to operating
voltage with a Variac so that electrolytics can "form"
is gentle.

* Check fuses before powerup. Many 'anchors will have the
wrong value fuse in it. Checking the fuse before purchase

is a good thing to do too. If it's open, you at least know what you are getting into.

* Don't trust that the tubes that are in the sockets are the correct tubes. Check them against the schematic. If you don't have a manual (and even if you do) note which socket the tube came from so that you can replace them correctly.

* Don't clean tubes with water. The marking on the glass will likely come off with one good swipe of a water dampened cloth.

* Assume many electrolytic and paper caps are bad. Check them.

* Check high resistance, and high wattage resistors for correct value.

* Nifty tools to have are flux brushes, for cleaning nooks and crannys. Windex is nice for cleaning chassis. Qtips are good to have too.

* NEVER clean dial markers or drums. If you do, assume that they will wipe away never to be seen again. You WILL say bad words if this happens!

* WD40 or Scotts Liquid Gold (my favorite) applied to a clean wrinkle finish will do a great job of restoring the lustre. Works well for knobs too!

* Never use WD40 or Scotts Liquid Gold on anything until you have tried it on a non-visable part of the cabinet to make sure it won't dissolve anything.

[------ help me out here... need more 1 liners and general tips-------]

Where do I get parts? (or "aren't tubes hard to find?")

You _will_ need parts to keep or get a boatanchor on the air. Remember that even 50's vintage radios are 40 years old.

Fortunately, hams are notorious packrats and parts suprisingly abound, for old gear, particularly at hamfests (and in the boxes under the table as mentioned earlier). Word of mouth once again will work wonders at getting tubes, high voltage caps, and the like shoved in your direction. Beware that this is an addiction, and boatanchor radios, parts, and periodicals will soon overrun all available space. Trust me.

If you are in a hurry, or need to get a radio working before your hoard of tubes and parts gets established the list below, taken originally from the ARRL server may be of help.

#--<
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American Radio Relay League, 225 Main St., Newington, CT 06111
(mwilson@arrl.org).
#
This ARRL Technical Information Service handout has been derived
>from the June 1992 QST "Lab Notes" column. Information has been
added to keep it current. You should also periodically check the
ham-classified section of ham and electronic publications.
#
How To Locate Manuals and Documentation
#
"Excellent rig. Needs a little work." How many times have you
passed up a good deal because you were certain you'd never find
the service information? How often have you sent your rig to the
factory for a bug that you could have fixed if you had the
documentation? Mike Gruber, WA1SVF, one of our ARRL Laboratory
Engineers, has searched high and low to find sources for service
manuals and other useful information. In this month's column he
gives you his results.--WB8IMY
#
Q: Why do I need documentation for my radio equipment?
#
A: Unless you're an electronics genius, proper documentation is
often essential to the repair or restoration of any radio
equipment. Even a simple schematic can save hours of time that
would be wasted otherwise.
#
Q: Okay, but is documentation readily available--even for my
antique receiver?
#
A: Believe it or not, there is a good chance that documentation
still exists for almost any radio you're likely to encounter. Your
success in finding it, however, depends on knowing what type of
documentation might be available for your particular piece of
equipment.

```
#
# Q: What types of documentation should I be looking for? Where can
# I find them?
#
# A: Let's save the names and addresses for later and begin by
# taking a look at the different types of equipment documentation
# available. There are several:
#
# Owner's Manuals: An owner's manual is supplied with the unit at
# the time of purchase. It's intended primarily as an instruction
# manual for the owner. It may not contain a schematic and service
# data is usually minimal. Although it's better than nothing, an
# owner's manual leaves quite a bit to be desired should a repair or
# alignment be required.
#
# Manufacturer's Service Manuals: Service manuals are usually sold
# by the manufacturer. They contain vital repair, service and
# alignment data. Most manufacturers supply service manuals for
# their products, although some may not provide manuals for obsolete
# equipment. If you're working with old equipment, it's possible
# that the manufacturer may have gone out of business. Keep this in
# mind the next time you purchase a new rig. Obtaining a service
# manual will take a little extra effort, but you'll be making a
# worthwhile investment in the future of your equipment.
#
# Third-Party Service Documentation: This type of documentation is
# is published by companies other than the manufacturer. It's
# available in several varieties from basic schematics to complete
# service manuals. While modern Amateur Radio gear is usually
# excluded, third-party documentation offers a wealth of information
# on antique receivers and modern consumer electronics.
#
# Q: Wait a minute. You mean that there are companies that publish
# and sell service data for another company's products?
#
# A: Certainly! Some of the most noteworthy publishers--past and
# present--include:
#
# Howard W. Sams & Company Photofacts: Sams started publishing
# Photofacts in 1946 with only 12 employees. Today Photofacts are
# accepted as the standard for accuracy. Complete chassis
# photographs are included and each component is clearly labeled.
#
# Alignment procedures and normal voltage readings are always
# provided. The extensive Photofacts library does not include modern
# amateur equipment, but you'll find service data for some of the
# classic shortwave receivers made by companies such as Hammarlund
# and Hallicrafters.
#
# Photofacts are sold in numbered folders and volumes. To obtain the
```

correct Photofact, you must find the reference number for your
particular piece of equipment in the Photofact Index.
#
There is an interesting sidenote to the Photofacts story. Sams
creates Photofacts from actual product samples. Instead of using
the manufacturer's schematics, the circuits are analyzed and
traced by Sams technicians!
#
John F. Rider Perpetual Troubleshooters Manuals: "Rider's," as
this series is commonly known, was first published in 1930 and
covered radios back to 1926. The first numbered volume, however,
appeared in 1933. New volumes were published at a rate of about
one per year until the last one, volume 23, appeared in 1953.
(Rider's for TVs, however, went from 1948 to 1957, volumes 1
through 18.)
#
Rider's is indexed by a system that is very similar to the
Photofacts. Several index volumes were published, such as volumes
1 to 7, 1 to 10, 1 to 15, 16 to 22 and 23 only. Unlike Photofacts,
however, Rider used service data provided by the manufacturers.
#
RCA Victor Service Data Books, commonly called "Redbooks." These
cover RCA receivers manufactured from 1923 to 1950. The first
volume covered receivers from 1923 to 1928. A new volume was
published each year until 1950.
#
Supreme Manuals: Compiled by M. N. Beitman, these first appeared
about 1930 and covered radios made as early as 1926. One volume
per year was published until the company went out of business in
the 1950s. These generally contain only schematics; Riders and
Photofacts are far more complete.
#
Hugo Gernsback's Official Radio Service Manuals: Six volumes were
published from 1929 to 1936.
#
Mallory Radio Service Encyclopedia: First published in the early
'30s, the Mallory Encyclopedias contained a very complete listing
of radios by manufacturer and model number. In addition, an exact
tube complement was given for each product. This information can
be very useful if you are seeking service data for an old radio
with an unknown model number.
#
Q: Speaking of tubes, what about vacuum tube data? Is that kind of
information still available?
#
A: It sure is! Data for Eimac tubes, frequently found in amateur
amplifiers and other high-power RF applications, is currently
available from the manufacturer. Transmitting tube data can also
be found in the ARRL Handbook; look for it in Chapter 35 if you
have a recent edition. Data books for other tube types, such as

receiving tubes, have been published by several companies. Most of
these data books are no longer in print. Copies, reprints and even
old originals can still be obtained if you know where to look. Two
of the most popular data books for tubes are:
#
RCA Tube Manuals: These are probably the most common tube manuals
-- especially for receiving tubes. Separate manuals were also
published for transmitting, special purpose and industrial tubes.
These manuals first appeared in the 1930s and were frequently
updated.
#
General Electric Essential Characteristics Tube
Data Books: These are similar to the RCA Manuals.
#
Tube substitution guides have also been published by Sams and John
F. Rider.
#
Q: Now that I know what I'm looking for, where can I find the
documentation?
#
A: If you prefer the manufacturer's service manual, start by
contacting the manufacturer directly. If the manufacturer is out
of business, or no longer supplies the manual you need, you have
other options. For example, try obtaining a copy from a manual-
supply company.
#
If you're working with military gear, manual-supply companies are
also good sources. And, some military equipment manuals can still
be obtained from the government. (More about that later.)
#
If you think a Photofact or Rider might be available based on the
age and type of equipment involved, check with your local library.
Many city and university libraries have them and will let you make
photocopies provided that no copyright laws are violated.
#
If your local library can't help you, try one of the "schematic
services" that cater to antique radio buffs. Their prices are
generally quite reasonable. Don't forget to check the hamfest flea
markets and yard sales. Service information can turn up in the
most unusual places!
#
For a difficult case, you might try a classified ad in QST. A
classified ad in a publication that specializes in the type of
equipment involved (such as Electric Radio Magazine\1/ or Antique
Radio Classified\2/ for surplus or antique rigs) may be very
effective.
#
ADDRESSES
#
Q: Come to think of it, I have several radios that could be put to

```
# good use--if they were working! How about those addresses you
# promised?
#
# A: Here they are. Good luck with your projects!
#
# Alinco Electronics, Inc
# 438 Amapola Ave
# Suite 130
# Torrance, CA 90501
# tel 310-618-8616
# Supplies Alinco manuals only.
#
# ---
#
# Amateur Wholesale Electronics
# PO Box 224
# 1040 Industrial Dr
# Watkinsville, GA 30677
# tel 404-769-8706 (technical service and orders)
# Manuals and replacement parts for Azden Radios.
#
# ---
#
# Antique Audio
# 41560 Schoolcraft
# Plymouth, MI 48170
#
# Older factory manuals for RCA, Zenith (including Transoceanics)
# and several others. Riders volumes 1 through 22, Sams Photofacts 1
# through 600, Beitman's volumes 1 through 10 and Sams Transistor
# Service Manuals volumes 1 through 90. The price is $5 per
# schematic up to 8 pages. Fifty cents for each additional page.
# Written inquiries for schematics preferred.
#
# ---
# Antique Electronic Supply
# 6221 South Maple Ave
# Tempe, AZ 85283
# tel 602-820-5411
#
# Antique Electronic Supply supplies pre-1960 service manuals for
# many electronic products, including communications receivers. The
# cost is $4.50 each. A catalog of antique radio parts and books is
# also available. They offer reprints of some older service manuals,
# tube manuals, a tube substitution guidebook and even a ballast
# tube manual. [LOTS of tubes!! /john]
#
# ---
# Ardco Electronics
# PO Box 95
```

Berwyn, IL 60402
#
Manuals for 95% of the Hallicrafters product line. The company was
founded by Anthony Dambrauskas, the Hallicrafters service manager,
when Hallicrafters went out of business in 1978. Today, the
business is being carried on by his son Robert. Manuals range in
price from $7 to $20.
#

Brock Publications
PO Box 5004
Oceanside, CA 92052
#
Manuals for for all amateur equipment sold by Swan Electronics.
Also stocks manuals for Cubic Communications, Astro and Siltronix
products. Brock Publications is a home business owned by Grace
Brock who retired from Swan Electronics/ Cubic Communications in
1990.
#
___
Cardwell Condenser Corporation
80 East Montauk Highway
Lindenhurst, NY 11757
tel 516-957-7200
FAX 516-957-7203
#
Manuals for Hammarlund equipment. In addition, they also have a
limited supply of components for Hammarlund receivers and transmitters.
They also manufacture roller inductors and variable capacitors.
#

Center For Legislative Archives
National Archives
Washington, DC 20408
tel 202-501-5350
#
(Record Group 287) US Army Technical Manuals for radio equipment
manufactured from 1940 to 1979. Photocopies can be obtained at a
cost of 25 cents per page and a $6 minimum order. A "Reproduction
Service Order" must first be completed by the National Archives to
determine the cost of the specific manual you desire. The manual
on this form must be identified by its proper Army Technical
Manual number. If this number is not known, contact your nearest
US Government Depository Library for assistance. (These are
usually the main public libraries in large and medium-sized
cities.) A booklet entitled Indexes and Lists to Army Technical
and Administrative Publications 1940-1979; The National Archives
Microfilm Publications Pamphlet Describing M1641, also available
>from the Archives, describes this procedure.
___

Dean K Kidd, W7TYR
27270 SW Ladd Hill Rd
Sherwood, OR 97140
tel 503-625-7363
#
Manuals and data for older Tektronix test equipment.
#

Eico Electronics Instrument Co, Inc
363 Merrick Rd
Lynbrook, NY 11563
tel 516-599-5744
#
Eico manuals for the last 25 years. Calls are accepted on Monday,
Wednesday and Thursday from 8:30 AM to 2:30 PM Eastern time.
#

Fair Radio Sales Co, Inc
1016 East Eureka
PO Box 1105
Lima, OH 45802
tel 419-223-2196
#
Manuals for surplus equipment. Also some Tektronix manuals and
vacuum tube data. Catalog available.
#

Hi-Manuals
PO Box 802
Council Bluffs, IA 51502
#
Extensive collection of manuals from the mid-30s to the 70s.
Amateur Radio equipment is included. You must order from a current
catalog and "dropped list." The cost is $3 for both. Many Heathkit
manuals in stock. They also supply vacuum tube data from the RCA
Receiving and Air Cooled Transmitting Tube manuals and the Rider
#35 Tube Substitution Guide. The cost is $5 per tube plus a
business-size SASE. Your check will be returned if the tube data
is not available. Hi-Manuals cannot accommodate technical
correspondence, quote requests or telephone calls.
#

Howard W. Sams & Co
2647 Waterfront Parkway East Dr
Indianapolis, IN 46214-2041
tel 800-428-7267
tel 800-428-5331
#
You can order Sams Photofacts through your local distributor
(saves postage and handling costs), by mail or by phone. Sams

covers most consumer electronic items manufactured since 1945. A
photocopy service for manufacturer's manuals and Rider's data is
also available.
#

ICOM America, Inc
2380 116th Ave NE
PO Box C-90029
Bellevue, WA 98009-9029
tel 206-454-7619
#
Manuals and parts for ICOM products. Call for prices. Most service
manuals cost around $25 for base and mobile units; $20 for hand-
held units.
#

Kenwood (East Coast)
East Coast Transistor Parts, Inc
2 Marlborough Rd
W Hempstead, NY 11552
tel 800-637-0388 (orders only)
#
Kenwood (West Coast)
Pacific Coast Parts Distributors, Inc
15024 Staff Ct
Gardena, CA 90248
tel 800-421-5080 (Outside CA)
800-262-1312 (CA only)
#
Kenwood product manuals only
#

Japan Radio Company
#
Service manuals are available from JRC dealers. The three
companies likely to have JRC manuals in stock are:
#
Electronic Equipment Bank
323 Mill Street NE
Vienna, VA 22180
tel 800-368-3270
#
Gilfer Shortwave
52 Park Ave
Park Ridge, NJ 07656
tel 800-445-3371
#
Universal Shortwave
6830 Americana Parkway
Reynoldsburg, OH 43068

tel 800-431-3939
#

Jim Farago
4017 42 Ave South
Minneapolis, MN 55406-3528
#
A complete set of Riders, Volumes 1 through 23, covering radios
>from 1924 to 1954. The cost is $3 per copy plus SASE. The customer
must provide the unit name, brand name and model number.
#

Land Air Communications
95-15 108th Street
Richmond Hill, NY 11419
tel 718-847-3090
#
Authorized dealer for Kenwood, ICOM and Yaesu manuals. Also
carries Collins, Johnson, Hallicrafters, National and other
manuals. Can provide schematics on most equipment dating back to
1945.
#

Musty Manuals
HamHeaven Communication Corp
645 Wheeling Rd
Wheeling, IL 60090
tel 708-634-6467
#
An extensive collection of owners manuals, service and maintenance
manuals, catalogs, magazines and other technical facts on all
types of early and late model radio equipment--including ham gear.
Manuals come with updates or articles, product reviews and other
tidbits of information. Catalog available.
#

MECCA
1132 Conway Dr
Newark, OH 43055
tel 614-522-4944
#
Used manuals for test equipment, amateur equipment and early
receivers. Prices range from $5 to $35. Send an SASE with your
request for price and availability.
#

Olde Tyme Radio Company
Suite 317
2445 Lyttonsville Road
Silver Spring, MD 20910

```
# tel 301-585-8776
# Some RCA Tube Manuals and Riders for sale. Catalog available.
#
# ---
# Puett Electronics
# PO Box 28572
# Dallas, TX 75228
# tel 214-321-0927 or 214-327-8721
#
# Schematic diagrams "for nearly any radio receiver." Cost is $5
# with manufacturer and model number; $15 plus drawing and
# description if the manufacturer or model number is unknown.
# Reproduction manuals, Rider's indexes, RCA Vacuum Tube Manuals,
# and many other service/instruction manuals for classic radios and
# related equipment are available. Some amateur equipment manuals
# including Collins. Test equipment manuals include Hewlett Packard,
# Tektronix, Hickock and others. Also supplies recordings of old
# radio shows as well as tubes and other antique radio components.
# Catalog available.
#
# ---
# Radio/TV/Ham Schematics
# Alton H. Bowman
# 4172 East Ave, RD 2
# Canandaigua, NY 14424
#
# A large collection of manuals and schematics for Amateur Radio
# equipment and other electronic products from 1920 to 1970--many
# unusual. Welcomes requests for odd-ball material with and without
# model numbers or labels. Prices are $5 for schematics and $7.50 to
# $10 for manuals. An SASE is appreciated. Alton emphasizes that
# this service is his hobby and not a business.
#
# ---
# R. L. Drake Company
# 230 Industrial Drive
# Franklin, OH 45005
# tel 513-746-6990
# Drake product manuals only.
#
# ---
# Robot Research Inc
# 5636 Ruffin Rd
# San Diego, CA 92123
# tel 619-279-9430
# Robot manuals only.
#
# ---
# Slep Electronics Co
# PO Box 100
```

Otto, NC 28763-0100
tel 704-524-7519
#
Operation and service manuals; schematic service for old and new
amateur radios, commercial and military surplus test equipment,
commercial and surplus military radios, antique radios and
equipment manuals. Catalog not available due to large stock. Send
an SASE for price and availability. Include make and model of each
unit.
#

Sony Publications
PO Box 20407
Kansas City, MO 64195
tel 816-891-7550, extension 33 (Customer Service)
Manuals for Sony shortwave receivers and other products.
#

Steinmetz Electronics
7519 Maplewood Ave
Hammond, IN 46324
tel 219-931-9316
#
Schematic copies from a complete set of Rider's and Beitman books,
some older manufacturer's manuals (consumer radios only) and Sams
Photofacts. The cost is $3 for the first schematic copy, $2.50 for
the second and $1.50 for each additional copy. Include an extra
dollar for research if the model number is unknown (SASE
preferred). Also carries vacuum tubes and other parts. Catalog
available.
#

Surplus Sales of Nebraska
1502 Jones St
Omaha, NE 68102
tel 402-346-4750
#
Stocks a complete line of manuals for Collins amateur equipment
and partial collection of commercial equipment. Call or send an
SASE for price and availability. Collins parts are also available.
#

Ten-Tec, Inc
PO Box 8010
Sevierville, TN 37864
tel 800-833-7373
#
Manuals for Ten-Tec products only. Most older manuals are
available and they will make photocopies. Call or write for
specifics.

```
#
# ---
# US Army Military History Institute
# Carlisle Barracks, PA 17013-5008
# tel 717-245-3611
#
# Technical manuals for military radio radio equipment. If possible,
# include the manual number with your request. If this is unknown,
# include a complete description of the equipment including the
# model name, model numbers and the time period in which the
# equipment was in use, if known. Once a specific manual is
# identified, it may be obtained in one of two ways. If the
# Institute possess three or me copies, one may be borrowed through
# interlibrary loan procedures. This process must be initiated at
# the your local library. Alternately, photocopies can be purchased.
# The minimum cost is $6 for up to ten pages. Each additional page
# is 25 cents. Each patron is allowed up to 300 pages per calendar
# year. Selected bibliographies of Institute holdings are available
# through interlibrary loan.
#
# ---
# Varian Associates, Inc
# 301 Industrial Way
# San Carlos, CA 94070-2682
# tel 800-432-4422
#
# EIMAC tube data for tubes from 1-kW to 1.5-kW plate dissipation
# including all glass-envelope tubes. 200-watt, 800-watt and larger
# tubes are manufactured in Salt Lake City, Utah. You can use the
# telephone number shown above to access either plant for data on
# any EIMAC tube.
#
# ---
# VISTA Technology Inc
# 3041 Rising Springs Ct
# Bellbrook OH 45305
# tel 513-426-6700
#
# Newly published manuals for selected models of Rockwell/Collins
# Amateur Radio equipment. Authorized by Rockwell International.
#
# ---
# Western Nebraska Electronics
# HC-84, Box 1
# Potter, NE 69156
# tel 308-879-4552
#
# A complete collection of Collins manuals. The cost is $12.50 for a
# reprint copy, or $35 for a printed copy. Also carries a large
# supply of Collins parts.
```

#

Yaesu USA
17210 Edwards Rd
Cerritos, CA 90701
tel 310-404-2700
Owners and service manuals for Yaesu products. Also sells
components.
#
---Notes: \1/Published monthly by Barry Wiseman, N6CSW, 4 Aspen
Pl, Durango, CO 81301.
#
\2/Published monthly by John Terrey, 498 Cross St, PO Box 2,
Carlisle, MA 01741, tel 508-371-0512.
#
---

* Where can I find more information?

Well, a good place to start is the boatanchors mailing list!
There are quite a few people with quite a few radios here,
and questions are always welcome. Ask away!

Alternate sounces of information:

* Electric Radio magazine.
Highly recommended! _The_ periodical for boatanchor operations.
Whether you are a ham or SWL, or restorer, there is something
in here for you. The classifieds alone are worth the price
of admission. Very professionally produced. Monthly.

Electric Radio Magazine
POB 57
Hesperus, CO.

* Antique Wireless Association.
Although a mixture of general old radio lore, and
communications gear, there is enough good stuff in here
to justify the price of $10 a year. Very nicely produced
and published! Quarterly.

[Address]

* AM Press Exchange

The "original" AM and boatanchor publication. Has been
rather slim in content of late, but interesting to get
if you already get E. Radio. Irregularly.

Don Chester-K4KYV
[address/cost?]

Where Do Hams Operate Boatanchors?

On CW you are likely to hear boatanchors lurking anywhere. There are probably more CW boatanchors in operation than anything else.

On AM the following frequencies frequently have AM activity, band conditions and seasonal variations withstanding:

3870-3890 Khz
7290-7300 Khz
14.286 Mhz
21.4-21.45 Mhz
29.0-29.2 Mhz

What are Typical Boatanchors and Prices?

This is a difficult one, as prices can vary from free to many hundreds of dollars. What follows is a list of popular radios and prices one would expect to see in the Electric Radio classifieds.

Transmitters: Collins 32V Series $175-$400
(32V1,2 and 3)

EF Johnson Ranger $90-$175
Viking I $75-$150
Viking II $60-$150
Valiant I,II $150-$300
Viking 500 $400-$700

Heath DX100 $40-$150 *
Apache $50-$150 *

* - Kits. Price should vary widely depending on how it was assembled.

Receivers: Collins 75A Series $125-$600
(75A1, 2,3 and 4)

National HRO60 $175-$350
National NC183D $100-$175

Hallicrafters
[someone help me here with a few models/prices?]

Hammarlund HQ129 $60-$150
HQ150 $75-$150
HQ160 $90-$175
HQ170 $100-$175
HQ180 $150-$250

Epilog

Dont look as boatanchors as an investment. Get a real grimy specimen and clean and fix, and coax it back to life. Turn in on with the rest of the room lights turned off. As it warms up look into the insides and see the orange glow from the filaments and the purple fire from the 866's. Watch the giant S-meter come to life, and the dials emit that soft light, framed by your carefully cleaned and waxed cabinet. Rotate the knobs that are of sufficient size and layout to permit easy, flywheel smooth adjustment.

Maybe tune to the BBC on your NC183.... watch the S-meter climb as the full audio comes out from the 6 watt output stage as you crank back the RF gain. Fiddle with a few more knobs (boatanchor operation does not need to ba a passive experience) to get it set just the way you want it.

Then you'll know why boatanchors are such pleasent things to own. Like mine, your transceiver may become a very expensive frequency counter and RF generator used to align the 'Real Radios'.

------------------------------ Cut here ------------------------------

3815. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 08:32:43 UTC
From: stevekh@perot.mtsu.edu
Message-ID: <3d0s3b$rlh@perot.mtsu.edu>
Source record: 115151
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

In <3cveeh$puq@bigblue.oit.unc.edu> jbhoward@email.unc.edu (james howard) writes:

>In article <3cv69g$4ms$1@mhadf.production.compuserve.com>,
>E.Colli strnd <73143.2036@CompuServe.COM> wrote:
>> I am interested in constructing a radio broadcast set with
>>enough power to reach a 10-14 mile radius. I would like to be
>>able to use a CD player with it, and possible a harmonizer. Does
>>anybody have any plans for such a thing using parts from radia
>>shack?

> Ok, who wants to be the first to point out the reason I can
>tell this guy just finished watching Pump Up the Volume?

> Comon. It's so *easy* to pick out. One little detail.

Yes, I know. The harmonizer. The thing is, the best way to go pirate is tto know exactly what the FCC Rules & Regs are, and have a good background in basic theory. You can then find a way to go around the rules. Of course, if you really don't care about the rules, and want to go really pirate, then you'll still be better off with a base in theory.

But, the simple way: There are companies that make FM transmitters with stereo RCA inputs, and have the maximum unlicensed output: 200mW. Ramesy Electronics makes one of these, called the FM-10. Its frequency stability is a little off, but for these purposes you're not gonna really care about that (it can be fixed with the addition of a regulated power supply and the replacement of a capacitor). Anyway, it operates from a 9V battery.

So now you've got your transmitter, but only enough power to reach your front door. Like Tim Allen, you need MORE POWER! Well, there's a little doohickey called a linear amplifier. They're usually built for amateur radio use, so they have the broadcast bands disabled in circuitry. Plus most only have a certain effective frequency range, anyway. So find one that has VHF circuitry, and take it to your workbench, and proceed to remove the "governor." Hook the trans to the amp (which then makes the trans the "modulator," and the amp the effective transmitter), and let fly.

Note: specific information not provided, even if you ask me for it. I don't really feel like being visited by a letter from my local engineering station. I'm only giving basic principles, so as not to get in trouble for whatever you might do with this information.

Specific information categories: how to disable the lockouts in the amp, how to hook up the FM-10 to the amp, how to construct an aerial.

One more thing: unless you know theory (again with the theory stuff) there's pretty much no way you'll be able to do this from RS (Radio Shack) parts. And if you know that much theory, you oughta know how to do this anyway.

--

__ ___ ___ _ _ ___ _ _ _ _
/ _|_ _| __| / | __| / | | | (stevekh@knuth.mtsu.edu)
\ \ | || _|| /| _|| /| | --
|\ \| || | / | | \| | Only /| |\/| | (i |\ makes it possible...
|__/|_||___|/ |___|__|_|_| ...for Commodore to live as long as it did!

3816. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 11:34:50 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <221783227wnr@ifwtech.demon.co.uk>
Source record: 115153

> I recently ran across a data sheet for the Motorola MRFIC2001 and
> some other related parts. They are transmit and receive mixers
> on a single chip.
>
> Are single chip mixers like these better than a SRA-1 with added
> amplification to make up for the SRA-1's losses?

No, they're generally worse, for two reasons. First, these are Gilbert cell (transistor tree) mixers with inherent noise figures of about 15dB: contrast 6-7dB NF for typical diode rings. This means that the ICs need more pre-mixer RF gain to keep the overall RX noise figure down.

Any pre-mixer gain will subtract almost dB-for-dB from the input intermodulation intercept of the whole RX.

The second reason, which makes things even worse, is that these ICs are designed for cellular phones and similar battery-powered equipment, so they run at low voltages and very low DC bias currents. This places fundamental limits on their strong-signal handling capabilities. You *can* get good intermod performance from a Gilbert cell mixer, but only by running it at high DC bias levels, as in the SL6440.

BTW, the NE602 falls into this same category of current-starved Gilbert cell mixers. Its strong-signal performance is really quite poor, and so is its NF.

Don't be confused by the fact that many of these new ICs have built-in RF amplifiers. You'll find that the *input* intermod intercept is usually very poor by today's ham standards. On the VHF bands today we're looking for 3rd-order input intercepts _for_the_whole_RX_ of at least 0dBm, and maybe would accept down to -5dBm at 432MHz. You can do significantly better than this if you try, but not on a 6V battery.

If the spec-sheet for one of these low-power devices quotes a good-looking intermod intercept, this is bound to be the *output* intercept. Subtract the gain of the mixer and any preceding stages on the chip to see the truth.

>
> Also, the 2001 series are made to work from 500 mhz to 1 gig or so.
> Are there any similar chips suitable for 50, 144 and 220 mhz?

These devices can probably be made to work on the lower VHF bands, and the equivalent devices for the 1.8GHz mobile telecoms band will work on 1.3GHz. They might open the way to simple homebrew VHF/UHF receivers in the same way as the NE602 has for the lower bands, but they represent a setback in the crusade towards bomb-proof receiver front-ends for serious DXing and contesting.

--
73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

3817. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 14:59:16 UTC
From: jlundgre@news.kn.PacBell.COM
Message-ID: <3d1io5$mbq@ohlone.kn.PacBell.COM>
Source record: 115156
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

Steven K. Halliburton (stevekh@perot.mtsu.edu) wrote:
: In <3cveeh$puq@bigblue.oit.unc.edu> jbhoward@email.unc.edu (james howard) writes:

: >In article <3cv69g$4ms$1@mhadf.production.compuserve.com>,
: >E.Colli strnd <73143.2036@CompuServe.COM> wrote:
: >> I am interested in constructing a radio broadcast set with
: >>enough power to reach a 10-14 mile radius. I would like to be
: >>able to use a CD player with it, and possible a harmonizer. Does
: >>anybody have any plans for such a thing using parts from radia
: >>shack?

: > Ok, who wants to be the first to point out the reason I can
: >tell this guy just finished watching Pump Up the Volume?

: > Comon. It's so *easy* to pick out. One little detail.

: Yes, I know. The harmonizer. The thing is, the best way to go pirate
: is tto know exactly what the FCC Rules & Regs are, and have a good
: background in basic theory. You can then find a way to go around
: the rules. Of course, if you really don't care about the rules, and
: want to go really pirate, then you'll still be better off with a
: base in theory.

: But, the simple way: There are companies that make FM transmitters
: with stereo RCA inputs, and have the maximum unlicensed output:
: 200mW. Ramesy Electronics makes one of these, called the FM-10. Its
: frequency stability is a little off, but for these purposes you're
: not gonna really care about that (it can be fixed with the addition
: of a regulated power supply and the replacement of a capacitor).
: Anyway, it operates from a 9V battery.

It's now the FM-10A.

: So now you've got your transmitter, but only enough power to reach
: your front door. Like Tim Allen, you need MORE POWER! Well, there's
: a little doohickey called a linear amplifier. They're usually built
: for amateur radio use, so they have the broadcast bands disabled in
: circuitry. Plus most only have a certain effective frequency range,
: anyway. So find one that has VHF circuitry, and take it to your
: workbench, and proceed to remove the "governor." Hook the trans to
: the amp (which then makes the trans the "modulator," and the amp
: the effective transmitter), and let fly.

WRONG. It's called an EXCITER.

: Note: specific information not provided, even if you ask me for it.
: I don't really feel like being visited by a letter from my local
: engineering station. I'm only giving basic principles, so as not to
: get in trouble for whatever you might do with this information.

Don't let him fool you. He's just making up excuses for his lack of
knowledge. "basic principles" means he's kind of fuzzy on any of the
details.

: Specific information categories: how to disable the lockouts in the
: amp, how to hook up the FM-10 to the amp, how to construct an aerial.

He's been reading too many back issues of Phrack. Those projects in
there are all passed thru third parties, so they *really* screwed up.

: One more thing: unless you know theory (again with the theory stuff)
: there's pretty much no way you'll be able to do this from RS (Radio
: Shack) parts. And if you know that much theory, you oughta know how
: to do this anyway.

Baloney. What does he think life is, anyway? Catch-22?

: --
: __ ___ ___ _ _ ___ _ _ _ _
: / _|_ _| __| / | __| / | | | (stevekh@knuth.mtsu.edu)
: \ \ | || _|| /| _|| /| | --
: |\ \| || | / | | \| | Only /| |\/| | (i |\ makes it possible...
: |__/|_||___|/ |___|__|_|_| ...for Commodore to live as long as it did!

--

John Lundgren - Elec Tech - Info Tech Svcs	Standard
Rancho Santiago Community College District	disclaim-
17th St. at Bristol \ Santa Ana, CA 92706	ers apply.
jlundgre@pop.rancho.cc.ca.us\jlundgr@eis.calstate.edu	

===== Canter & Siegel - do us a service: dry up and blow away ======

3818. Re: PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 16:07:07 UTC
From: hawley@aries.scs.uiuc.edu
Message-ID: <hawley.787766827@aries>
Source record: 115158

jeffery@uspto.gov (John Jeffery) writes:

>I have a Yaesu FT-990 located near my PC in my ham shack and am getting some
>interference from the PC in the radio. I discovered that the monitor is
>contributing some interference by turning off the monitor.

>I've tried putting ferrite filters on the monitor, data, and power cables
>for the PC but to no avail. I even tried shielding the PC but that didn't
>help either!

What kind of monitor is it so we can avoid it? My NEC does not do this. Try moving it across the room....does it still cause interference....then maybe it's in the power line. Try a lot more ferrite. It usually takes a lot.

3819. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 16:14:01 UTC
From: sct@po.cwru.edu
Message-ID: <3d1n49$c2@usenet.INS.CWRU.Edu>
Source record: 115159
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

Would you folks mind removing this thread from the rec.radio.amateur
newsgroups? It has nothing to do with licensed amateur radio.

Followups set to alt.radio.pirate only.

--
Stephen Trier "Klein bottle for sale. Inquire within."
sct@po.cwru.edu - Unknown
KG8IH

3820. Re: Mod. on IC2AT

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 18:07:18 UTC
From: jdevenport@lanl.gov
Message-ID: <3d1tom$of4@newshost.lanl.gov>
Source record: 115160

In article <3c904j$87d@ccnet.ccnet.com>, teixeira@ccnet.com (TEIXEIRA) says:
>
>I have an IC2AT 2 meter HT. I would like to empty an old battery pack and
>connect it to a cig. adapter for the car. Question: can I run 12v to the
>2AT or do I have to reduce it to 7.2v????
>Don N6FNL <teixeira@ccnet.com>
You COULD hook it up straight to 12V but I don't recommend it, even if the
receiver chips survive it is hard on the transmitter PA.
Much better to install an LM7809 (9 Volt) or 7808 (8 Volt) 3-terminal
voltage regulator inside the battery case. I have one without any heat
sink at all on the regulator IC and it has never given any trouble.
This requires at the most 3 or 4 parts (78XX regulator, a capacitor or 2,
wire and whatever you want to use for connectors... I use insulated
alligator clips so I can use it in any place I can ....).
Jim WB5AOX

3821. Re: CB conversions to 10meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 18:18:10 UTC
From: jdevenport@lanl.gov
Message-ID: <3d1ud2$of4@newshost.lanl.gov>
Source record: 115161

In article <D0puHu.AEH@oucsace.cs.ohiou.edu>, weinfurtner@ouvaxa.cats.ohiou.edu says:
>
>Gary wrote:I have a new RS TRC-465 cb I have never used. I just passed my general
>test and I would like to convert my cb to somthing useful. Anyone
>having experiance (good or bad) with such a conversion please let me know.
>Thanks.
..I've been using converted CB rigs on the ham bands for years, I think
they are great. Many of the latest units are more difficult to convert,
however. Earlier synthesized rigs involved cutting jumpers on the
PLL chip or crystal changing to get the rig up into the ham bands.
Even a crystal controlled SSB CB rig can be used as an exciter for a transverter
to 6, 2 meters SSB etc.
I still have a couple or 3 AM CB's converted to 10 FM use, and a couple
of SSB CB's I still use on 10 SSB.
I'm not familiar with the TRC465 so dunno if it is AM only or what.
There is still some AM activity on 10 but I rarely talk to them and have
never used a converted CB for 10 meter AM.
I recently moved and much of my stuff is still buried in boxes but I have
a pretty good file on 10 meter CB conversions, and you can contact the
73 magazine offices to see if they still have their excellent series of
articles on such conversions.
Let me know if I need to dig my junk out, I'd say my choices would be:
1- keep your radio in the trunk and use it if ever needed on good ole CB
use, and watch for a Used Uniden HR2510 or HR2600 in the ads or at
swapfests.
It's fun using a conversion like this but it does usually eat up some time,
depends on what you have the most of.. time or money, or like most of us,
little or none of either??
Jim WB5AOX

3822. New 75 meter Traders Net :)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 19:28:30 UTC
From: ko4ta@mindspring.com
Message-ID: <ko4ta.47.00F2FD5A@mindspring.com>
Source record: 115162

New, a traders net beginning on 75 meters. The 2100 Gang is sponsoring a traders net commencing on Friday 12/16/94. Please check in if you have a listing.

*The net begins at 9:00 pm on Friday nights (Eastern)

*The net will run until all listings have been made.

*The Net Control Operator is KO4TA Don near Atlant, Ga.

*All amateur related items may be listed that are personally owned by the Ham making the list.

Be there or be square. 73 es God Bless

3823. Re: PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 19:29:55 UTC
From: slovell@u.washington.edu
Message-ID: <3d22jj$1h1@nntp1.u.washington.edu>
Source record: 115163

I have a Yaesu FT-990 located near my PC in my ham
shack and am getting someinterference from the PC
in the radio. I discovered that the monitor is
contributing some interference by turning off the
monitor.
I've tried putting ferrite filters on the monitor,
data, and power cablesfor the PC but to no avail.
I even tried shielding the PC but that didn't
help either!
Does anyone have any suggestions for me on this
problem?

I had the same problem a few years ago with my old PC monitor. I
came up with a solution that gets smirks and snide comments from
all that see it, but it works. I went down to Safeway and got an
18" wide roll of (argh) Heavy Duty Reynolds Wrap and wrapped the
monitor in that. It was hard to see the screen then so I cut away
the part that covered the glass. This didn't do much good. Then
I ran a jumper from the PC's frame to the foil. BIG improvement!
If you want to try this, remember to make sure you poke holes for
ALL the ventilation ports! The only reason to use heavy duty foil
is because it's much more resistant to abuse. If you ground the
foil to a screw on the computer case make sure the screw mates with
the gronded frame and not just plastic. Probably the shorter the
ground jumper run the better (?). Probably metal screen would work
just as well.
If anyone tries this, or has other suggestions, I'd love to
hear about it. I had hoped that my new FCC Class B monitor would
not have this problem, but it does, and I'm really reluctant to wrap
my new $800 monitor in foil. Suggestions?

--Sherman Lovell, WY7F

P.S. Disconnecting the (unshielded?) printer cable helped too. Would
.001 caps to ground at the output and/or a good shielded cable help?

3824. Re: PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 19:42:19 UTC
From: slovell@u.washington.edu
Message-ID: <3d23ar$1jp@nntp1.u.washington.edu>
Source record: 115164

One other thought on monitors radiating into radios: My antenna runs right over the top of my "shack" (I'm on the top floor of an old house, and the dipole is strung right along the roofline), so it's a very short trip from monitor to antenna -- about 5 feet. (I'm qrp, so the bioeffects are not a big concern.) I wonder if getting the antenna farther away/ re-orienting it (as the FCC advice always says) would help.

--Sherman Lovell, WY7F

3825. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 20:00:17 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3d24ch$35p4@yuma.ACNS.ColoState.EDU>
Source record: 115165

In article <D0wqyK.3JA@sunsrvr6.cci.com> jdc@cci.com (James D. Cronin) writes:
>I recently ran across a data sheet for the Motorola MRFIC2001 and
>Are single chip mixers like these better than a SRA-1 with added
>amplification to make up for the SRA-1's losses?

There's a post regarding the 3rd order specs and overload. Read that,
and also consider other Mini-Circuits parts. I use the TUF-1SM instead
of the SBL's and SRA's, since the package is designed for surface mount
and it's cheaper. Spec's are roughly the same. I usually follow the mixer
with a MAR series amp and a bandpass filter.

Galen, KF0YJ

3826. Re: Yaesu Band Data output connector interface details

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 21:23:58 UTC
From: barry@w2up.wells.com
Message-ID: <NaTJXc1w165w@w2up.wells.com>
Source record: 115167
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

bart@wb6hqk.ampr.org (Bart Rowlett) writes:

> I'm looking for a description of the Band Data output on Yaesu HF
> xcvrs (FT-990 in particular). I have looked in the manual and all
> I can glean is that it's a parallel output from the onboard
> microprocessor but not the actual coding. I would appreciate a description
> or reference on the output coding.
>
> Thanks,
>
> bart wb6hqk
>
> bart@wb6hqk.ampr.org
>

It's a BCD output as follows:

Band	A	B	C	D
1.8	1	0	0	0
3.5	0	1	0	0
7	1	1	0	0
10	0	0	1	0
14	1	0	1	0
18	0	1	1	0
21	1	1	1	0
24	0	0	0	1
28	1	0	0	1
29	0	1	0	1

The 7442 TTL BCD to decimal converter works nicely as the controller for
an interface to automatically switch antennas. There's one commerically
available from Top Ten Deivces in Phoenixville, PA

If anyone has info on the DVS jack outputs on the FT1000, I'd appreciate
info.

--
==
Barry N. Kutner, W2UP Usenet/Internet: barry@w2up.wells.com
Newtown, PA Packet Radio: W2UP @ WB3JOE.#EPA.PA.USA.NA
Packet Cluster: W2UP >K2TW (FRC)
.....

3827. Looking for SPICE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 21:56:00 UTC
From: fried@freddy.in-berlin.de
Message-ID: <D110xD.48L@freddy.in-berlin.de>
Source record: 115166
Cross-posted to: rec.radio.amateur.homebrew,alt.sources.wanted,comp.sources.wanted

Hi netters,

can some kind soul please point me to a ftp site from
where I can get the SPICE package. I have a Sparcstation 1
running SunOS 4.1.3.

Any tips will be appreciated.

Thanks
Friedhelm

--
----____ __ _ --
(/_ (/_/ Friedhelm Kappen fried@freddy.in-berlin.de
_/ _/ _ Marschnerstr. 8
* * D-12203 BERLIN phone +49 30 834 1679

3828. IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 23:03:04 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941219164506258@posnet.co.uk>
Source record: 115079

In a message of 18 Dec 94 Ian G3sek wrote to All:

>> Are single chip mixers like these better than a SRA-1 with added
>> amplification to make up for the SRA-1's losses?

IG> No, they're generally worse, for two reasons. First, these are Gilbert
IG> cell (transistor tree) mixers with inherent noise figures of about
IG> 15dB: contrast 6-7dB NF for typical diode rings. This means that the
IG> ICs need more pre-mixer RF gain to keep the overall RX noise figure
IG> down.

Hello Ian

Delighted to see a message from you in here. For a long time I've admired the work you've done to improve VHF/UHF receiver design. Years ago I built the pre-cursor to what was to become the Mutek front-end for my FT221 from the article you published in Dubus.

IG> Any pre-mixer gain will subtract almost dB-for-dB from the input IG>
intermodulation intercept of the whole RX.

IG> These devices can probably be made to work on the lower VHF bands, and
IG> the equivalent devices for the 1.8GHz mobile telecoms band will work on
IG> 1.3GHz. They might open the way to simple homebrew VHF/UHF receivers in
IG> the same way as the NE602 has for the lower bands, but they represent a
IG> setback in the crusade towards bomb-proof receiver front-ends for
IG> serious DXing and contesting.

Whilst I'd agree with every word you've said about absolute receiver performance there is still a case to be answered for building KISS receivers. I think there has to be divergance between the needs of the simple homebrewer and the state-of-the-art receiver builder.

What I think I'm trying to say (badly) is that it's better to homebrew a bad receiver; finding out it's limitations and progress from there, than it is to never have tried. If these IC mixers encourage people to build then isn't that in itself a good thing? The finer points of RX design can come latr.

To paraphrase, "this is an example of a bad receiver so the others know what a good receiver sounds like".

After all, it's not until your Icoyaeken black box has suffered severe blocking from the portable on the adjacent hilltop that you truly appreciate the need for better receiver strong signal performance.

Regards Paul. Internet : paul.whatton@sharpbbs.centron.com ... Amiga Amateur Radio User Group. Free Membership. Netmail me for details.

--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3829. Bipolar Transistor Circuit

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-18 23:14:41 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941219164507259@posnet.co.uk>
Source record: 115078

In a message of 17 Dec 94 Jeffrey Starin wrote to All:

JS> I am confused about bi-polar transistor circuits. In the designs that
JS> I have seen these devices are supposed to act as switches, turning on
JS> and off other components, for example relays, etc. My question is
JS> this, if a matrix of bi-polar transistors (or even one, for that
JS> matter) can pass a much larger current when the base of the transistor
JS> is charged by a small current, why are these transistors turning on and
JS> off relays? Why can't the transistor itself act as a relay switch?

Hello Jeffrey

The short answer is that they often can. For example I key my transmitter from a IC keyer with a simple transistor switch. The transmitter key jack is connected directly between the collector and emitter of a small NPN transistor. But it all depends on the size and nature of the load you wish to swich. Using a transistor to switch a relay can control voltages that would kill the transistor stone dead. For example if I wanted to directly switch mains (240V) electricity I might find difficulty in choosing a transistor that could stand the voltage. Instead I could use a low voltage transistor to rive the relay and then switch the nasty volts on. The relay contacts can be rated for much higher voltage and/or current than the transistor can stand.

Regards Paul. Internet : paul.whatton@sharpbbs.centron.com ... AmigaBee BBS 2:254/214 Tel 081 695 5328 * Amiga Ham radio file area *
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3830. Vacuum Variable Caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 00:06:46 UTC
From: jmaass@freenet.columbus.oh.us
Message-ID: <3d2iqm$8uc@acme.freenet.columbus.oh.us>
Source record: 115068

I am assembling parts for a 160-meter amplifier, and will be
shopping for a couple of vacuum variable capacitors.

For the tuning capacitor, it looks like I need only about
150 pF @ 100KV or 15KV. From looking about in some source, it looks
like a 300pF (like UCS-300) may be the choice. How is the
availability of vac. variables in this range? Cost?

For the loading capacitor, calculations show I need around 500 pF
(but 650 pF _MUCH_ better) at around 3KV. The rest of the capacitance
will come from fixed capacitors, but I need about 422 pF to cover
1.8 MHz to 2.00 MHz (Pi-L, with plate impedance around 3000 ohms).

To allow for less-than-perfect antenna loads, I'm looking to allow
for a bit more loading capacitance range than calculated for the
ideal case, at least 650 pF, and perhaps as much as 1000 pF.

I've one reference which shows a suitable 650 pF unit (CMV1-650), but
I can't recall having seen other references to it being available.
I recall 750 pF units referenced in articles, and the UCSL-1000
used in several amplifier construction articles. Can anyone comment
on the current availability of any of these units, and likely
costs?

What are the most-available vacuum variable and fixed vacuum
capacitors available used or surplus?

Thanks for any information!
--
Jeff Maass NW of Columbus Ohio Amateur Radio K8ND
USPSA/IPSC # L-1192

3831. 3.975 mhz is the freq of the Traders Net.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 02:53:54 UTC
From: ko4ta@mindspring.com
Message-ID: <ko4ta.51.010C6C89@mindspring.com>
Source record: 115070

[No readable article body recovered]

3832. 3.975 mhz is the freq. of the traders net on 75 meters

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 02:54:31 UTC
From: ko4ta@mindspring.com
Message-ID: <ko4ta.52.010CFE6E@mindspring.com>
Source record: 115069

Ok starting over from the top. I am sorry I didn't post the proper information. I was in a hurry to get to church this morning. So here is the information:

Time: 2100 eastern
Place: 3.975 mhz
Day : Friday night
Net conrol operator : KO4TA DonDon

Thanks to all who sent me Email so I could get back in here and straighten this out.

Yes it is coming at a good time that the 3.898 traders net is ending on Friday nights. That is by design. Bill and George are going to be helping get this one going.

So drop in and list something and let's have a good net.

Thanks again.

Don Simpson

3833. Radio Shack 404 ht mod?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 05:48:23 UTC
From: dominick@earth.planet.net
Message-ID: <3d36r7$sb7@jupiter.planet.net>
Source record: 115071

I need a mod for the rs 440ht. Ive been told it cant be done. Please
let me know.
Thanks
Dom
Dominick A. Atanasio |And this above all else, to
|thine own self be true.
Locksmith Extraordinaire|And so it must follow, as the
|night the day, thou canst not
Mt.Arlington, NJ USA |then be false to any man.
|William Shakespeare

3834. gel cells

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 06:05:29 UTC
From: eldot@fohnix.metronet.com
Message-ID: <3d37r9$gio@fohnix.metronet.com>
Source record: 115072

Question on gel cells: are the requirements for charging gel cells
any different than ordinary lead-acid, liquid electrolyte batteries?

I remember something being different, but fail to recall what it
is. On attempting to charge them by ordinary means, they refuse
to accept the charge. Is the key to boost the voltage, watch the
current at about .1 of amp hour rating, then cut back when charged
fully? The ones I have were installed in hospital emerency lighting
fixtures. They were replaced as a matter routine maintenance.

thanks.

--

```
_____________________________________________________
| Lowell Blevins | eldot@metronet.com |
| 817 488 8217 | W8KIP |
_____________________________________________________
```

3835. What's this FB in a 435 MHz GaAsFET Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 07:06:32 UTC
From: brax@ava.hut.fi
Message-ID: <brax.3.2EF530F8@ava.hut.fi>
Source record: 115087

I'm trying to put together an ultra-low-noise GaAsFET preamp for a satellite receiving station. I found the design by Chip Angle, N6CA, in Davidoff's "Satellite Experimenter's Handbook" (the same design is said to appear in 1990 ARRL Handbook), but there is apparently some difference in US and European symbol standards, because nobody here has been able to tell me, what is this symbol adjacent to the FET drain with letters FB next to it. A Ferrite Bead? A Fuse (Blown)? A F..ing Bastard? How does one connect a FB to the rest of the circuit?

Also, because I have to operate the system at 400.15 MHz, some tuning will be required. Any ideas, what kind of tuning?

Matti Brax
Helsinki University of Technology
Lab. of Space Technology

3836. Re: High Performance HF Receiver/Transmitter Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 12:30:13 UTC
From: davek9sw@aol.com
Message-ID: <3d3ucl$6es@newsbf01.news.aol.com>
Source record: 115073

In article <3cnmva$4e6@bmerha64.bnr.ca>, Bill Kirkland <kirkland@bnr.ca>
writes:

Bill-
Are you referring to the receiver design that hasbeenin the ARRL Handbook
for the past 10 yearsor so? I built the receier about ten years ago. It
works well. Are you working on upgrading it?

3837. VLF RECEIVERS ANY EXPERIENCES

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 13:43:30 UTC
From: butch@maestro.maestro.com
Message-ID: <D128sJ.BED@maestro.maestro.com>
Source record: 115074

December 19, 1994

I have had a ticket for 25 years, but recently I have been exploring the means of accurately calibrating frequency standards. I presently have a tracor 599F rx, I need a good active ant. I would like to hear from others who are working along similar lines. I can be reached via this newsgroup or e-mail. My address is butch@maestro.com

73's
Allan Bart
WA2RZQ

3838. Re: Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 14:49:02 UTC
From: kludge@netcom.com
Message-ID: <kludgeD12Btq.IoG@netcom.com>
Source record: 115075

In article <941216164537232@posnet.co.uk> paul.whatton@posnet.co.uk (Paul Whatton) writes:
>In a message of 11 Dec 94 Larry Horlick wrote to All:
>
> LH> I am building an HF amp 160 to 10 m using an 8877 tube. I am in the
> LH> final stage Larry Horlick
> LH> VE8HL
>
> Oh Larry! A 8877 for HF! What a waste! 8877s make beautiful 2 metre
>amplifiers, great for DX modes. But HF...

Hey, I built an audio amplifier once using the 829. Why the 829? Well,
the transmitter at the local FM station used them, and they used to replace
them every six months, just in case. So, they had a large stock of pulls,
which wound up in the audio monitor amp....
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

3839. I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 15:18:39 UTC
From: jtesta@freenet.columbus.oh.us
Message-ID: <3d488f$hkj@acme.freenet.columbus.oh.us>
Source record: 115076

I have a TV that decided to go to the grave. The picture has 1 horizontal line through the middle and since it is > 10 years old (13 inch), i decided to buy a new one. Is there anything I can do with the parts? (as a amateur radio operator, i just can't bring myself to throw it away). If nothing else i guess i can practice de-soldering. I know there is some real DANGEROUS voltage in there, so any hints on how to NOT electrocute myself would be appreciated also.

joe
--
Joseph S. Testa (no not the Franklin County, OH auditor)
This is in hex for YOUR benefit.
54 68 65 20 65 76 65 72 2D 74 68 69 6E 6B 69 6E 67 0A
50 72 6F 67 72 61 6D 6D 65 72 0A

3840. Re: PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 16:14:00 UTC
From: tom.hammond@woodybbs.com
Message-ID: <93.3827.7584.0NFB7E0D@woodybbs.com>
Source record: 115100

>>I have a Yaesu FT-990 located near my PC in my ham shack and am
getting som interference from the PC in the radio. I discovered that
the monitor is contributing some interference by turning off the
monitor.

>>I've tried putting ferrite filters on the monitor, data, and power
cables for the PC but to no avail. I even tried shielding the PC but
that didn't help either!

>What kind of monitor is it so we can avoid it? My NEC does not do this.
Try moving it across the room....does it still cause interference..
then maybe it's in the power line. Try a lot more ferrite. It usually
takes a lot.

FWIW, A local found that by merely REMOVING the internal ground
connection of the foil shield around the CRT he was able to completely
eliminate any traces of CRT-induced interference to his radios. The
ground was connected to the chassis (I think) of the CRT... maybe to the
power line gound... don't recall any more.

73 - Tom Hammond N0SS
* LAKOTA v1.4
--- Alexi/Mail 2.02b (#83)
* Origin: Distant Winds BBS * Jefferson City, Mo * [314] 635-7868 (1:289/67)

3841. 1/4" to 3/8" (or 1/2") shaft couplings.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 16:54:26 UTC
From: Waltk@pica.army.mil
Message-ID: <9412191154.aa03809@COR5.PICA.ARMY.MIL>
Source record: 115077

Howdy, and thanx for stopping by to read this.

I'm looking for a parts supplier who carries 1/4" to 3/8"
(or 1/2") flexible shaft couplings, or reducers.
I have a capacitor that has a 1/2" shaft (not sure its
in the amp and I can't dimensions unless I tear it apart).
and I need to reduce it to a 1/4" shaft. The way the cap
is mounted may require a flexible coupling. Please
reply ASAP, want to use the holiday break to fix things
up around the shack.

Many thanx,
Walt - K2WK

.....
73 de Walt Kornienko - K2WK Internet: waltk@pica.army.mil
DX PacketCluster: K2WK > W3MM Packet: K2WK@N2ERH.NJ.USA.NOAM
_____

3842. Re: DSP Phase Shifter?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 16:56:19 UTC
From: raymonda@Eng.Sun.COM
Message-ID: <3d4dvj$hvv@engnews2.Eng.Sun.COM>
Source record: 115099

In article 546@acenet.com, brian.carling@acenet.com (Brian Carling) writes:
>From: brian.carling@acenet.com
>Newsgroups: rec.radio.amateur.homebrew
>
... paragraphs deleted ...

>TC>My question is, are there any DSP chips or chipsets that have
>TC>been developed to accomplish the 90-deg phase shift or Hilbert
>TC>transform? The NeXT I am typing this on has a DSP56000 and
>TC>A/D and D/A so with a little (?) programming it could perform
>TC>a 90-deg phase shift (on a voice signal anyway). Nowadays,
>TC>it would take a half dozen chips or so to make a dedicated DSP
>TC>phase shifter. Is there such a beast commercially available?
>
>Hello Tom - actually yes, there is a company that sells a
>kit form SSb transceiver that uses a phasing circuit to develop the SSB.
>It is available from KANGA US c/o N8ET
>
>Do you want the address?
>73 - AF4K
>brian.carling@acenet.com
>---
> • SLMR 2.1a • California does have it's faults...

I believe the unit referred to above is the R2 and T2 receiver and
transmitter developed by Rick Campbell. This is NOT a DSP based unit. The audio
quadrature generation circuit utilizes a conventional op-amp based analog
all-pass filter configuration. The RF quadrature generation network is
not provided on the circuit board and is left to the constructor to
provide.

73 de WB6TPU, Ray
raymonda@radium.eng.sun.com

3843. Re: What's this FB in a 435 MHz GaAsFET Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 17:11:05 UTC
From: little@iamu.chi.dec.com
Message-ID: <3d4er9$n6j@nntpd.lkg.dec.com>
Source record: 115080

In article <brax.3.2EF530F8@ava.hut.fi>, brax@ava.hut.fi (Matti Brax) writes:
|>I'm trying to put together an ultra-low-noise GaAsFET preamp for a satellite
|>receiving station. I found the design by Chip Angle, N6CA, in Davidoff's
|>"Satellite Experimenter's Handbook" (the same design is said to appear in 1990
|>ARRL Handbook), but there is apparently some difference in US and European
|>symbol standards, because nobody here has been able to tell me, what is this
|>symbol adjacent to the FET drain with letters FB next to it. A Ferrite Bead? A
|>Fuse (Blown)? A F..ing Bastard? How does one connect a FB to the rest of the
|>circuit?

It is a ferrite bead. According to the text in the Handbook, the ferrite bead mounts in a small hole cut in the board. The drain lead passes through this bead and is soldered to a pad. The hole in the board apparently allows the ferrite bead to be mounted flush on the board so that it can be mounted directly next to the GaAsFET without any appreciable lead length.

Hope this helps.

73,
Todd
N9MWB

3844. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 18:48:39 UTC
From: tomb@lsid.hp.com
Message-ID: <D12Mx3.3Iy@hpcvsnz.cv.hp.com>
Source record: 115086

Lance Lascari WS2B (lascal@cortez.its.rpi.edu) wrote:
: James D. Cronin (jdc@cci.com) wrote:
: : Are single chip mixers like these better than a SRA-1 with added

: I think you're on the right track... they are active devices with some
: RF "glue" all in one chip. I think that if you looked at the specs
: (dynamic range, maybe port isolation, etc) you would see that these
: "crunch" i.e. overload much before an SRA-1. I don't have a

: : Also, the 2001 series are made to work from 500 mhz to 1 gig or so.
: : Are there any similar chips suitable for 50, 144 and 220 mhz?

: Be very careful to check the strong signal specs (third order
: intercept point, one db compression point) if you use any of these IC
: mixers in receivers/ rx converters.

(Quite a bit edited out ...)

You might have a look at the Analog Devices AD831, which has a +24dBm
3rd order intercept and needs only -10dBm LO. All three ports go from
DC to 500MHz. There's an output buffer amplifier built in. You don't have
to worry about maintaining a 50 ohm load over a wide frequency range as you
do with the diode mixers. It comes in a little PLCC case. About the only
problem I see right off is that it dissipates lots of power itself--around
a watt. Not wonderful for battery-powered portable stuff!

73, K7ITM
Tom

3845. ARRL Radio Designer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 18:59:37 UTC
From: hbrown@nadir.resd
Message-ID: <1994Dec19.185937.16748@knight.vf.ge.com>
Source record: 115083

Does anyone have any experience with the ARRL Radio Designer CAD package? It was written up in QST during the fall and it sounded good in the articles. I'd like recommendations or complaints or both from someone with hands on experience. Has anyone seen anything on it in another news group or list?

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3846. ARRL Radio Designer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 18:59:43 UTC
From: hbrown@nadir.resd
Message-ID: <1994Dec19.185943.16805@knight.vf.ge.com>
Source record: 115082

Does anyone have any experience with the ARRL Radio Designer CAD package? It was written up in QST during the fall and it sounded good in the articles. I'd like recommendations or complaints or both from someone with hands on experience. Has anyone seen anything on it in another news group or list?

73, Harry, W3IIT
hbrown@resd.vf.ge.com

3847. How to measure coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 19:08:21 UTC
From: mam@cbnews.cb.att.com
Message-ID: <D12ntz.lHn@nntpa.cb.att.com>
Source record: 115081

All I want to do is measure coils.

Isn't there a _simple_ circuit that can be used to measure the microhenries
of a coil? I've got a freq counter, and an O-scope, plus an old XT with
which to measure things. But no circuit.

Please help with a specific circuit. I don't do well with
"Just build an oscillator" kind of instruction.

Thanks. When I get this nut cracked, I can move on to building one of
the many qrp-circuits I've collected, but haven't been able to do 'cause
I CAN'T DO COILS!

--Mark KB2els
mccuistion@attmail.com

3848. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 19:30:55 UTC
From: dtiller@rmc.edu
Message-ID: <3d4n1f$cmr@gnd0.rmc.edu>
Source record: 115098

Joseph Testa (jtesta@freenet.columbus.oh.us) wrote:

: I have a TV that decided to go to the grave. The picture has 1 horizontal
: line through the middle and since it is > 10 years old (13 inch), i decided
: to buy a new one. Is there anything I can do with the parts? (as a amateur
: radio operator, i just can't bring myself to throw it away). If nothing
: else i guess i can practice de-soldering. I know there is some real
: DANGEROUS voltage in there, so any hints on how to NOT electrocute
: myself would be appreciated also.

Yeah, there's some whacko from Hawaii that makes CW equipment from TVs... :-)

--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
Don't let your SKS get | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
"Tainted with Defilement!" | Ashland, Va 23005 | 77d 31' 32.19" W |

3849. Looking for SPICE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 20:46:08 UTC
From: fried@freddy.in-berlin.de
Message-ID: <D12sCw.C6@freddy.in-berlin.de>
Source record: 115103
Cross-posted to: rec.radio.amateur.homebrew,alt.sources.wanted,comp.sources.wanted

Hi netters,

can some kind soul please point me to a ftp site from
where I can get the SPICE package. I have a Sparcstation 1
running SunOS 4.1.3.

Any tips will be appreciated.

Thanks
Friedhelm

--
----____ __ _ --
(/_ (/_/ Friedhelm Kappen fried@freddy.in-berlin.de
_/ _/ _ Marschnerstr. 8
* * D-12203 BERLIN phone +49 30 834 1679

3850. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 20:56:23 UTC
From: myers@Cypress.West.Sun.Com
Message-ID: <3d4s1n$fss@abyss.West.Sun.COM>
Source record: 115085

In article hkj@acme.freenet.columbus.oh.us, jtesta@freenet.columbus.oh.us (Joseph Testa) writes:
>
>I have a TV that decided to go to the grave. The picture has 1 horizontal
>line through the middle and since it is > 10 years old (13 inch), i decided
>to buy a new one. Is there anything I can do with the parts? (as a amateur
>radio operator, i just can't bring myself to throw it away)

Yeah, send it to Jeff Herman in Hawaii. He digs broken TV sets.

---
* Dana H. Myers KK6JQ, DoD#: j | Views expressed here are *
* (310) 348-6043 | mine and do not necessarily *
* Dana.Myers@West.Sun.Com | reflect those of my employer *
* "Antenna waves be burnin' up my radio" -- ZZ Top *

3851. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 21:08:47 UTC
From: smasters@bzy.gmu.edu
Message-ID: <3d4sov$5jn@portal.gmu.edu>
Source record: 115084

Joseph Testa (jtesta@freenet.columbus.oh.us) wrote:

: I have a TV that decided to go to the grave. The picture has 1 horizontal
: line through the middle and since it is > 10 years old (13 inch), i decided

If it's that old then the tuner can range up into the 800 MHz range.
This could be used to receive any number of signals in that range, excluding
celluar phone of course.
Then again there's always the nice Spark gap generators you can make
from the other parts:-).

73,
Shawn
KE4GHS

3852. IC mixers vs SRA-1 for DC rcvrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 22:43:26 UTC
From: rlt@ssd.intel.com
Message-ID: <D12xsE.Jw7@SSD.intel.com>
Source record: 115088

I have a question for those better versed in this area than myself.
The article on the R1 design mentioned the noise figure of diode mixers
at audio frequencies was much worse that the stated 6-7db quoted at rf
frequencies. Since audio noise figure of the mixer is critical to a
direct conversion receiver, would a Gilbert cell mixer such as the SL6440
(quoted at 11db nf) have a better noise figure than a diode mixer at
audio?

Roger Traylor WB4TPW
--
Roger Traylor
rlt@ssd.intel.com
Intel Corporation - Supercomputer Systems Division
Beaverton, OR 97006

3853. Re: Building station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 23:16:03 UTC
From: n9315@pnet16.navy.mil
Message-ID: <D12zAs.6J3@nctams1.uucp>
Source record: 115089
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

sct@po.cwru.edu wrote that this doesn't belong in rec.radio.amateur. Sure
it does, it says right in the movie that he was doing his broadcasting
with a modified ham radio... :)

****
*Unless otherwise stated, expressed view are my own. They may not be the *
opinions of my superiors, the U.S. Navy, the DoD, nor the U.S. government.
* *
*Rich Sheff - KD6HWF\KH6 | krokus@m-net.arbornet.org (forwarded) *
*ex- VK6JCA, ex- HL9RMT | n9315@nctams1.navy.mil *
****

3854. Re: IC mixers vs SRA-1 for DC rcvrs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 23:40:00 UTC
From: OSYSMAS@MVS.OAC.UCLA.EDU
Message-ID: <199412192340380SYSMAS@MVS.OAC.UCLA.EDU>
Source record: 115093

>The article on the R1 design mentioned the noise figure of diode mixers
>at audio frequencies was much worse that the stated 6-7db quoted at rf
>frequencies. Since audio noise figure of the mixer is critical to a
>direct conversion receiver, would a Gilbert cell mixer such as the SL6440
>(quoted at 11db nf) have a better noise figure than a diode mixer at
>audio?

When I read that article, that was one of the things I noted as
very interesting. Makes me think about a non-DC receiver,
perhaps an IF around 30Khz might be enough to avoid the noise.

3855. BOATANCHORS elist has moved to a new host

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-19 23:54:53 UTC
From: ab4el@cybernetics.net
Message-ID: <3d56gd$kh1@jabba.cybernetics.net>
Source record: 115090
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.digital.misc,rec.antiques.radio+phono,sci.electronics

NOTE: The BOATANCHORS elist moved to a new host. Below is the greetings
sent this weekend to current subscribers. If joining the BOATANCHORS
list is of interest to you, you ought to read the greetings.

In a subsequent message, I will broadcast the procedure for subscribing--
now that it can be handled entirely by email to the list management
program running on ThePorch.com.

--de Steve AB4EL ab4el@Cybernetics.NET in Raleigh, NC
----------------Cut Here----------------

BOATANCHORS CHANGEOVER RELAY GOES "KER-CHUNK"!!!

Greetings and welcome to the new and improved (but still vintage)
"boatanchors" mailing list. An automated list manager should help things
run more smoothly for everyone while still providing the same
outstanding signal-to-noise ratio we have enjoyed since the list's
beginning.

Jack Hill W4PPT has agreed to provide a new home for the list, with the
blessings of Paul Prescott N1AAC who took over from Our Esteemed Founder
Jim Lockwood KM6NK.

NOTE - You need not re-subscribe or take any special action other than
noting the new addresses listed below. The subscription list was moved
intact from the old mit.edu site and you are already on it if you got
this message.

Subscribers of the satellite list on boatanchors@beacons.cts.com will
also be moved to this new address.

The new mailing list address is now

boatanchors@ThePorch.com.

Use this now for messages of general interest to the entire group
Please don't use it to subscribe, change address, etc.

The new automated list manager address is

ListProc@ThePorch.com

Use this for subscribing, unsubscribing, getting archived info,
getting the FAQ message, changing your address, etc.
Now send a message to ListProc@ThePorch.com with just
HELP in the body to get info on how to do this.

The new list owner address is

ListOwn@jackatak.ThePorch.com

Use this address only when there is a problem which really
truly can't be resolved otherwise.

Now, yes right now, save this message so you'll have these addresses
handy. Whew, thanks - doesn't that feel better?

You will also soon receive a copy of the "Welcome" message that will be sent
to all new subscribers. It includes more useful info on things like the
purpose of the list, how to subscribe/unsubscribe, etc. It would be a
good idea if you save it along with this message for future reference
or to pass on to interested parties. Thanks.

The transition team has included long-time boatanchorites and folks who
have been helping keep "boatanchors" alive over the last couple of years.

We have tested this program on a variety of mail programs, but we know that
it is possible some behavior may be different (particularly in how you reply
to just an individual or to the entire list). There seems to be no way to
satisfy all possible e-mail software! Just relax, keep your eyes open, and
adjust your habits accordingly.

We hope that we'll all now have a stable, reliable, and useful list with
a minimum of disruption. Enjoy.

Happy Holidays and 73 from the transition team.

Jack W4PPT Larry KQ4BY Phil at theporch.com
Steve AB4EL Kevin KN6FQ Jim KR1S
Paul N1AAC Dan H at MIT Nick KD4CPL

3856. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 00:20:32 UTC
From: mgarrett@prairienet.org
Message-ID: <3d580g$fhj@vixen.cso.uiuc.edu>
Source record: 115091

In a previous article, jtesta@freenet.columbus.oh.us (Joseph Testa) says:

>
>I have a TV that decided to go to the grave. The picture has 1 horizontal
>line through the middle and since it is > 10 years old (13 inch), i decided
>to buy a new one. Is there anything I can do with the parts? (as a amateur
>radio operator, i just can't bring myself to throw it away). If nothing
>else i guess i can practice de-soldering. I know there is some real
>DANGEROUS voltage in there, so any hints on how to NOT electrocute
>myself would be appreciated also.
>
>joe
>--
>Joseph S. Testa (no not the Franklin County, OH auditor)
>This is in hex for YOUR benefit.
>54 68 65 20 65 76 65 72 2D 74 68 69 6E 6B 69 6E 67 0A
>50 72 6F 67 72 61 6D 6D 65 72 0A
>
Well Joe, If the picture was good before it died and everything else ok, why
not find the cause of death and fix it. Many times it may be just a
component or two and the beast lives again. Many librarys can get you
the Sams Photofacts and you can brush up on you fixin skill. Just
remember not to ground anything to the chassis while it is plugged in and
not to touch anything.
If you dont think you are up to it then take it out for a little target
practice.
--
Mark Garrett mgarrett@prairienet.org
KA9SZX @ N9LNQ.#ECIL.IL.USA.NOAM

3857. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 00:38:04 UTC
From: philip@wv.mentorg.com
Message-ID: <3d591c$cru@hpbab.wv>
Source record: 115112

In article <3d488f$hkj@acme.freenet.columbus.oh.us>, jtesta@freenet.columbus.oh.us (Joseph Testa) writes:
|>
|> I have a TV that decided to go to the grave. The picture has 1 horizontal
|> line through the middle and since it is > 10 years old (13 inch), i decided
|> to buy a new one. Is there anything I can do with the parts? (as a amateur
|> radio operator, i just can't bring myself to throw it away). If nothing
|> else i guess i can practice de-soldering. I know there is some real
|> DANGEROUS voltage in there, so any hints on how to NOT electrocute
|> myself would be appreciated also.

You can probably get lots of fun out of it by trying to repair it.
The most probable cause of your problem is a failure in the vertical
deflection amplifier (my first suspect would be the output transistor).

Many times, you can find and fix this sort of problem without any
particularly expensive kit, and without circuit diagrams. Look for
potemtiometers labeled things like "vert. amp." "vertical hold" or
similar - look (and smell !) around that area, feel the components to see
if any are particularly hot. Keep your fingers away from that wire which
goes from the side of the CRT to that thing surrounded by a metal cage,
that's where the REALLY high voltages are !

If you are feeling really adventurous, get the service manual for it,
and use that to help.

Playing around this way is a good way to get into electronics - particularly
if you *are* using a service manual, and going about tracking down the
problem in a methodical way.

Philip

3858. FM radio transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 03:54:56 UTC
From: rmckinno@linden.msvu.ca
Message-ID: <1994Dec19.235053.1@linden.msvu.ca>
Source record: 115092

Hi... my name is Jeff McKinnon. I'm 15 years old and I'm new on the Internet but I have liked radio for years. I would like to make or buy an FM radio transmitter but have no knowledge of the techy stuff whatsoever... can anyone out there help me? Please e-mail any and all help to: rmckinno@linden.msvu.ca

Thanks!

3859. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 07:21:35 UTC
From: russell@spdcc.com
Message-ID: <D13Lrz.59A@spdcc.com>
Source record: 115094

In article <3d591c$cru@hpbab.wv>,
>The most probable cause of your problem is a failure in the vertical
>deflection amplifier (my first suspect would be the output transistor).
>

I'll second this! I got a free Montgomery Ward 13" cable ready
TV with remote with this exact problem. I opened it up, looked around
and found a circuit board with "Vertical hold" marked on it, found a
loose solder joint on a capacitor, resoldered it, and have been using
the TV for over a year now. The TV was replacable for $120 or so, so
the original owner didn't want to bother paying the $80 every stupid
TV shop wanted just to open it.

--
Tim Russell n0zhy@wd0har.#ene.ne.us.na russell@spdcc.com
Most people would rather have comfort than freedom. The paradox is that you
can't really have the former, in the long term, unless you have the latter.
-- Amanda Walker

3860. Re: How to measure coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 07:35:04 UTC
From: little@iamu.chi.dec.com
Message-ID: <3d61f8$ose@nntpd.lkg.dec.com>
Source record: 115096

In article <D12ntz.IHn@nntpa.cb.att.com>, mam@cbnews.cb.att.com (mark.a.mccuistion) writes:
|>All I want to do is measure coils.
|>
|>Isn't there a _simple_ circuit that can be used to measure the microhenries
|>of a coil? I've got a freq counter, and an O-scope, plus an old XT with
|>which to measure things. But no circuit.

I'd suggest building a dipper (Grid dipper, Source dipper, whatever). Combine that with your frequency counter and some capacitors of known value, you should be able to determine the inductance of most coils. Simply connect the coil to a capacitor of known value, find the resonant frequency with the dipper (use frequency counter too for better accuracy) and then "Do the Math", i.e. L = 1 / (4 * pi**2 * f**2 * C).

|>Please help with a specific circuit. I don't do well with
|> "Just build an oscillator" kind of instruction.

Look back in either 73 or QST over the last couple of years. One of them had an article on how to build a source dipper. It's a simple project and a dipper is an invaluable device.

|>Thanks. When I get this nut cracked, I can move on to building one of
|>the many qrp-circuits I've collected, but haven't been able to do 'cause

An alternative is simply calculate the inductance based upon the geometry of the coil. For single layer air wound coils, the formula is:

L = d**2 * n**2 / (18*d + 40*l)

where L in uH, d coil diameter in inches, l coil length in inches, and n is number of turns.

73,
Todd
N9MWB

3861. B&W miniductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 07:49:55 UTC
From: dl278@cleveland.Freenet.Edu
Message-ID: <3d62b4$k8s@usenet.INS.CWRU.Edu>
Source record: 115095

I recently decided to build an antenna tuner for an SW receiver.
I soon discovered that I had no catalogs that seemed to carry
B&W miniductors which are all I need to do it (being lazy and not
wanting to try winding coils).

Anyone have a possible source?

I've already sent a letter to B&W to see if I can still buy directly.
I tend to try to be patient and use the mail as I'm in Germany and
even 800 numbers cost money to call.

tnx

Bill
.
--
email: bgraham@tecnet1.jcte.jcs.mil
ampr: N5LMX@K9IU.IN.USA.NA (but I'm in Germany (DA1WG), honest!)
"My head hurts, my feet stink and I don't love Jesus!"- J. Buffett

3862. Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 08:12:03 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941221084704286@posnet.co.uk>
Source record: 115097

In a message of 19 Dec 94 Scott Dorsey wrote to All:

>> LH> I am building an HF amp 160 to 10 m using an 8877 tube. I am in the
>> LH> final stage Larry Horlick
>> LH> VE8HL

>> Oh Larry! A 8877 for HF! What a waste! 8877s make beautiful 2 metre
>> amplifiers, great for DX modes. But HF...

SD> Hey, I built an audio amplifier once using the 829. Why the 829?
SD> Well, the transmitter at the local FM station used them, and they used
SD> to replace them every six months, just in case. So, they had a large
SD> stock of pulls, which wound up in the audio monitor amp....
SD> --scott

Howdy Scott

Of course VHF tubes make great HF amplifiers. If I remember correctly the 829 was an un-neutralised VHF double tetrode, a pre-cursor to the popular QQVO3-20A and QQVO6-40A tubes. I think I might still have a 829 somewhere.

The reason I made the comment about the 8877 on HF was that over the years I've built several VHF & UHF tube linear amplifiers. Usually these have been based on the 4CX250B tetrode, although I once got hold of a 4CX1000- what a prize! For years I wanted to make a QRO triode 2 metre amplifier and the8877 would have fitted the bill perfectly. Unfortunatley they are very hard to find over here in the UK. Surplus ones are very very rare and new ones very very expensive. So when I saw Larry using such a beautiful tube on DC frequencies.. Oh!!!

Regards Paul G4DCV. Internet : paul.whatton@sharpbbs.centron.com ... Amiga Amateur Radio User Group. Free Membership. Netmail me for details.
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3863. KISS? (Was: IC mixers vs. SRA-1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 10:17:07 UTC
From: G3SEK@ifwtech.demon.co.uk
Message-ID: <656896752wnr@ifwtech.demon.co.uk>
Source record: 115102

Paul Whatton wrote in reply to me:

> Whilst I'd agree with every word you've said about absolute receiver
> performance there is still a case to be answered for building KISS
> receivers. I think there has to be divergance between the needs of the
> simple homebrewer and the state-of-the-art receiver builder.
>
> What I think I'm trying to say (badly) is that it's better to homebrew a
> bad receiver; finding out it's limitations and progress from there, than it
> is to never have tried. If these IC mixers encourage people to build then
> isn't that in itself a good thing? The finer points of RX design can come
> later.

I agree with most of what you say, Paul. The urge to homebrew goes in two directions. One is to build something better than can be bought off-the-shelf... but this posting goes off in the other direction, the road more often traveled.

Most homebrewing, including kit-building, is done for its own sake, as a learning experience. That's how people get started and gain the experience and confidence to move on, so there's always a need for published projects that are within reach of the beginner and the casual builder.

But it's vitally important that early experiences of homebrewing are *good* ones, both in the construction and in the eventual performance of the gear. Despite its drawbacks, I think that on balance the "NE602" approach is a good thing because it makes simple receiver projects very easy to build.

The performance side is less certain, though. There are some very dubious so-called "KISS" projects published, which are marginal in design terms and are almost sure to disappoint (if they ever work at all in the hands of a beginner).

In particular I would strongly criticize the "fewest possible component" design approach (design? huh!), especially when it's allied with some other form of performance handicap such as QRP. This is the high road to disillusionment with homebrewing.

There's a difference between economy of design and the mindless pursuit of so-called simplicity. People who are trying to follow a published design (and are thus putting their trust in the designer and author) would far rather use a few extra components to be sure that the finished project will work reliably. Or at least, they would if given the choice.

Myself, I tend to go the other way, including buffer amplifiers, extra shielding and decoupling and all kinds of over-engineering, so that the finished project has a very good chance of working first time. For me, that *is* the simplest and quickest way to homebrew.

In other words, the whole "Keep It Simple, Stupid" ethos seems to contain some serious internal contradictions - or at the very least, some dangerous pitfalls.

Here are three questions to keep you entertained over the holiday:

1. Why "Keep It Simple"?
2. Who's "Stupid"?
3. What *is* "appropriate technology" in ham homebrewing?

Comments please, homebrewers!

--
73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
Abingdon, England |
g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)

3864. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 10:27:08 UTC
From: randolph@est.enet.dec.com
Message-ID: <3d6u64$g5c@mrnews.mro.dec.com>
Source record: 115108

Joseph Testa (jtesta@freenet.columbus.oh.us) wrote:
>: I have a TV that decided to go to the grave.

Yup, been there, done that. There is a big, thick, high-voltage lead coming out of the side of the picture tube. It looks something like a spark plug lead. Beware! This lead has quite a charge on it, even after the set is off and unplugged. I snipped it (insulated cutters and a heavy leather glove, keep one hand in your pocket at all times) and shorted it to the chassis...POP! Shorting several more times over the next few minutes got some much smaller pops.

Other than that, make sure the caps in the high-voltage supply (the other end of the high-voltage lead) are discharged. The TV I took apart had a bleed resistor on the cap, but I put a screwdriver across it first anyway. With 25KV, might as well be sure!

With that said, I might note that all the stuff inside has bloody house part numbers on them, which means I have no idea what's what anyway! I find this is often the case with consumer electronics! You can still scrounge hundreds of passive components, though.

-Tom R. N1OOQ randolph@est.enet.dec.com

3865. Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 14:31:44 UTC
From: jtesta@freenet.columbus.oh.us
Message-ID: <3d6psg$4av@acme.freenet.columbus.oh.us>
Source record: 115101
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I picked up a copy of Hamcom30 and am going to build the circuit
for decoding. I have come up with a couple of questions:
1. The 100K Ohm resistors, what wattage should i use?
2. I could not find a TL701 op amp but found a TL702, can I use
it instead (i think it is just a dual Tl701 in 1 chip,
please set me on the stright and narrow if i am out in
left field).

Thanx in advance
joe, n8xct, attempting 1st home built project :)

--
Joseph S. Testa (no not the Franklin County, OH auditor)
This is in hex for YOUR benefit.
54 68 65 20 65 76 65 72 2D 74 68 69 6E 6B 69 6E 67 0A
50 72 6F 67 72 61 6D 6D 65 72 0A

3866. Tube Input Impedance ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 14:44:17 UTC
From: dsnowden@ccd.harris.com
Message-ID: <1994Dec20.144417.23536@ccd.harris.com>
Source record: 115104

What is the method of calculating the input impedance for a cathode driven (grounded grid) tube or tubes ?

--
Doug Snowden, N4IJ
dsnowden@ccd.harris.com

3867. Re: 9600 baud packet modem kits?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 15:58:25 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3d6uv1$d3c@info4.rus.uni-stuttgart.de>
Source record: 115115

In article <billv.127.000D28BD@olympus.net>,
Bill Vaughn <billv@olympus.net> wrote:
>Looking for one that doesn't cost an arm and a leg.

a) In what country?

b) To be used with a TNC or to plug into the serial port of a PC?

73, Moritz DL5UH

3868. Re: What's this FB in a 435 MHz GaAsFET Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 16:06:24 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3d6ve0$k0t@info4.rus.uni-stuttgart.de>
Source record: 115105

In article <brax.3.2EF530F8@ava.hut.fi>, Matti Brax <brax@ava.hut.fi> wrote:
>I found the design by Chip Angle, N6CA, in Davidoff's
>"Satellite Experimenter's Handbook" (the same design is said to appear in 1990
>ARRL Handbook),

Matti,

NEVER attempt to build one of these older designs, they are often unstable
and by no means up to todays standards. Modern designs are computer-optimized,
employ new and affordable devices and noise figures around 0.3 - 0.4
are feasible. BTW, FB is a ferrite bead and is a doubtful method for
curing oscillations.

I could send you stuff on new circuits.

gook luck, Moritz

3869. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 16:14:17 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3d6vsp$kiq@info4.rus.uni-stuttgart.de>
Source record: 115117

In article <3d488f$hkj@acme.freenet.columbus.oh.us>,
Joseph Testa <jtesta@freenet.columbus.oh.us> wrote:
>If nothing
>else i guess i can practice de-soldering. I know there is some real
>DANGEROUS voltage in there, so any hints on how to NOT electrocute
>myself would be appreciated also.

Joe,

As to the electrocuting, simply unplug it before desoldering componenents.
Depending if you are into homebrewing, you may find some of the
components useful, but dont expect to much. You could also get the
diagrams and fix it, I used to learn a lot by fixing TV's.
You could also connect some audio to the vert. scan coils
and have a great oscilloscope-wizzard-lightshow effect.

Have fun, Moritz DL5UH

3870. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 17:00:26 UTC
From: jcarter@orl.mmc.com
Message-ID: <3d72ja$bd0@theopolis.orl.mmc.com>
Source record: 115107

In article 4av@acme.freenet.columbus.oh.us, jtesta@freenet.columbus.oh.us (Joseph Testa) writes:

Joe

/I picked up a copy of Hamcom30 and am going to build the circuit
/for decoding. I have come up with a couple of questions:

I built the hamcom30 interface last week. The program works great.
I hope the author will select someone in the USA to register people.
I am going to have a hard time converting $ to DM.

/ 1. The 100K Ohm resistors, what wattage should i use?

The resistor can be 1/4 watt, there's no current to speak of
going through it. If you can't fine 100k then 120k or anything
near there will do. It's not critical. Let's say +/- 20K.

/ 2. I could not find a TL701 op amp but found a TL702, can I use
/ it instead (i think it is just a dual Tl701 in 1 chip,
/ please set me on the stright and narrow if i am out in
/ left field).

You can use it but it will use a little more power. The serial port
can power about 80ma I think. Anyway if you want you can wire in
a 9 volt battery for power. It should work fine and last forever
in this low power application. Just add a switch so you can turn it off.
If you use a battery then "do not" connect anything to the DTR and DSR
lines on the serial port.

Also you can leave all the diodes out and it will still work fine.
I installed d1 and d4 and c2 and c3 just to be safe. If you power
it with a battery then leave out everything except the .1uF (c1) cap
at the input and the two 100k resistors. With a battery you will not
need the diodes or the filter caps (c2)and (c3).

Radio Shack has all the parts including the TL701 in stock. I picked
up one of their small bread boards to mount everything on and ran the
serial and soundblaster cables from that board.

If you have any trouble let me know.

Jim

\/\/ * \/ _._. __._ /\/\/ | James A. Carter (Jim) | jcarter@orl.mmc.com |
/|\ | Senior Software Engineer |_____________________|
/\|/\ K D 4 P O N | Martin Marietta | These views are my own |
/\/|\/\ ORLANDO | Mail Point 138 | and not that of my |

```
/\/\|/\/\ FLORIDA USA | 5600 Sand Lake Road | employer. |
/\/\/|\/\/\_____________| Orlando, FL 32819-8907 |__________73's_Jim ____|
```

3871. information required

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 18:29:13 UTC
From: carlin@aztec.co.za
Message-ID: <3d77pp$1t5@ticsa.com>
Source record: 115111

I will be in Atlanta Ga in a weeks time and require the Phone numbers and
names of suppliers of books and equipment on TVRO and ELECTRONICS
My Address: carlin@aim1.aztec.co.za
Please reply fast
Thanks
Syd

3872. Re: How to measure coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 19:03:34 UTC
From: mack@ncifcrf.gov
Message-ID: <D14I9y.BJw@ncifcrf.gov>
Source record: 115106

In article <D12ntz.IHn@nntpa.cb.att.com> mam@cbnews.cb.att.com (mark.a.mccuistion) writes:
>All I want to do is measure coils.
>
>Isn't there a _simple_ circuit that can be used to measure the microhenries
>of a coil? I've got a freq counter, and an O-scope, plus an old XT with
>which to measure things. But no circuit.

You can use a grid dip oscillator (GDO). You make a guess as to the number
of turns, put it in the circuit and test the resonant freq with the GDO.
Joe NA3T

>
>Please help with a specific circuit. I don't do well with
> "Just build an oscillator" kind of instruction.
>
>Thanks. When I get this nut cracked, I can move on to building one of
>the many qrp-circuits I've collected, but haven't been able to do 'cause
>I CAN'T DO COILS!
>
>--Mark KB2els
>mccuistion@attmail.com

3873. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 19:56:07 UTC
From: zlau@arrl.org
Message-ID: <1994Dec20.195607.5553@arrl.org>
Source record: 115109

N2VNO James D. Cronin (jdc@cci.com) wrote:

: I recently ran across a data sheet for the Motorola MRFIC2001 and
: some other related parts. They are transmit and receive mixers
: on a single chip.

: Are single chip mixers like these better than a SRA-1 with added
: amplification to make up for the SRA-1's losses?

They might be useful for detector stages once RF selectivity
has been established with good filters. Often, they have
balanced medium impedance outputs, which is quite useful for
driving audio stages. The low impedance output of an SRA-1
is a poor choice for driving audio amplifiers. Balanced
can offer excellent common mode rejection, which is convenient
for eliminating AC hum.

Unfortunately, the poor input intercept of these devices means
you can't have much gain ahead of them, which might be useful
for balancing the gain distribution. A receiver with an
AGC amplifier with little gain but lots of control voltage,
as well as a high gain audio amplifier would probably sound OK.

I think you want to design the system for at least 40 dB of
in-band dynamic range.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3874. Re: What's this FB in a 435 MHz GaAsFET Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-20 20:41:45 UTC
From: wk@muscle.frc.maf.govt.nz
Message-ID: <WK.94Dec21094145@muscle.frc.maf.govt.nz>
Source record: 115110

> NEVER attempt to build one of these older designs, they are often
> unstable and by no means up to todays standards. Modern designs are
> computer-optimized, employ new and affordable devices and noise
> figures around 0.3 - 0.4 are feasible. BTW, FB is a ferrite bead and
> is a doubtful method for curing oscillations.

I agree with this. I recently put together the MRF966 preamp (ARRL 1990 handbook page 32-1) and had a good old time taming it. The description gives the impression they are cookbook recipes... not so. I put mine in a compartimented box, observing the usual UHF techniques, used more rigorous bypass decoupling, and it still screamed to high heaven. Also I found the gate input circuit to be miles out.

However, the MGF1402 design by N6CA claims to be reproducible, also, it has a better noise figure, but I have my doubts (ferrite beads of indeterminate composition to reduce gain...)

About using computer modelling with UHF circuit design... it pays to leave the brain switched on. Most devices have such a spread that the parameters are no more than an approximation. Translating the optimised design back to a real world circuit is another source of errors.

Wilbert.

--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet:wk@frc.maf.govt.nz packet:ZL2BSJ@ZL2WA.NZL.OC or @ AO16, LO19
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

3875. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 00:04:42 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <3d7req$m1d@bronze.lcs.mit.edu>
Source record: 115018
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <3d6psg$4av@acme.freenet.columbus.oh.us>,
Joseph Testa <jtesta@freenet.columbus.oh.us> wrote:
>
>I picked up a copy of Hamcom30 and am going to build the circuit
>for decoding. I have come up with a couple of questions:
> 1. The 100K Ohm resistors, what wattage should i use?
1/8W or 1/4W resistors should do. The circuit doesn't draw much
current (as it sits on the serial port, it *shouldn't*!)

> 2. I could not find a TL701 op amp but found a TL702, can I use

No, that should be a _TL071_. It's a single op-amp whose pinout will
match the 741. For that matter, if you've a 741 around, you can use it
to test the circuit until you get the better '071. After three years,
I've yet to change the 741 in mine for the other chip.

>
>Thanx in advance
>joe, n8xct, attempting 1st home built project :)
>
Good luck. I found it to be a really fun and interesting project as well!

--
| David Moisan, N1KGH /^_/^\ moisan@bronze.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

3876. Re: VLF RECEIVERS ANY EXPERIENCES

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 00:55:50 UTC
From: burch@sps.mot.com
Message-ID: <1994Dec21.005550.18277@newsgate.sps.mot.com>
Source record: 115116

I share you interest in precision frequency calibration via radio, but I have not had the time to persue it or any other home project.

I am not familiar with Tracor equipment but I have heard only positive comments about it. You did not mention wether you intend to use WWVB, LORAN C, OMEGA, or ?? You also did not mention if you intend to build and antenna or purchase one. If you wand to build one, you may want to tke a look at an article in the January 1994 issue of 73 magazine. It describes a WWVB receiver and an active antenna based on a ferrite core.

I think that I also have a schematic for an active LORAN C whip if you need it.

3877. Re: KISS? (Was: IC mixers vs. SRA-1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 01:37:22 UTC
From: dcurtis@mipos2.intel.com
Message-ID: <3d80si$aad@inewssc.intel.com>
Source record: 114969

In article <656896752wnr@ifwtech.demon.co.uk> G3SEK@ifwtech.demon.co.uk writes:
>Paul Whatton wrote in reply to me:
>
>> Whilst I'd agree with every word you've said about absolute receiver
>> performance there is still a case to be answered for building KISS
>> receivers. I think there has to be divergance between the needs of the
>> simple homebrewer and the state-of-the-art receiver builder.
<snip>
>There's a difference between economy of design and the mindless pursuit
>of so-called simplicity. People who are trying to follow a published
>design (and are thus putting their trust in the designer and author)
>would far rather use a few extra components to be sure that the finished
>project will work reliably. Or at least, they would if given the choice.
>
>
>Comments please, homebrewers!

The concept you are looking for is "manufacturing yield". Of course,
the "factory" is not very well under your control, as you so rightly point
out, so high yield is going to be a challenging goal. It seems to me
now that the ARRL is puting out inexpensive software that does a
reasonable job of yield analysis, construction project
authors do not have much excuse for publishing a marginal project. In
fact, editors do not have much excuse for accepting articles without
seeing some yield analysis from the author (although I wouldn't expect
them to spend space publishing same).

Your comments about "over engineering" are only correct up to a point.
At some point, extra components will reduce yield. Also note that
"over optimized" designs tend to be lower in yield. "I got 12dB gain..."
is a lot different from "995/1000 copies of this circuit show 12dB gain
with 10% power supply margin and all components chosen at random from
many manufacturing lots." Ham radio literature is full of "tweaky"
designs, which are certain to discourage as least *some* readers.

In short, my definition of simplicity is: "easy to make it work to spec".
Or in engineerese: "high manufacturing yield". This drives a design
towards the sweet spot of just enough components to be reliable, with
no additional baggage that increases cost/complexity and reduces
long term reliability.

73, Dave NG0X

>
>
>--

> 73 from Ian G3SEK | Editor, _The_VHF/UHF_DX_Book_
> Abingdon, England |
> g3sek@ifwtech.demon.co.uk | "In Practice" columnist for RadCom (RSGB)
>

3878. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 01:44:45 UTC
From: gerhard@netmbx.netmbx.de
Message-ID: <XRJVBSCH@netmbx.netmbx.de>
Source record: 115114

In article <D12Mx3.3Iy@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>
>You might have a look at the Analog Devices AD831, which has a +24dBm
>3rd order intercept and needs only -10dBm LO. All three ports go from
>DC to 500MHz. There's an output buffer amplifier built in. You don't have
>to worry about maintaining a 50 ohm load over a wide frequency range as you
>do with the diode mixers. It comes in a little PLCC case. About the only
>problem I see right off is that it dissipates lots of power itself--around
>a watt. Not wonderful for battery-powered portable stuff!
>
... and it has a SSB noise figure of 20 dB.
You could insert a 12 dB pad at the rf port of a SRA-1 and
still achieve at least the same noise figure. The pad would
improve the SRA-1's intercept point by another 12 dB.

At 400 MHz, the AD831 intercept point has dropped to 15 dBm. The IP
seems to drop sharply for IF frequencies > 20 MHz, too (see Figure 11 of
data sheet).

73, Gerhard DK4XP

--
Gerhard Hoffmann # phone: +49 30 782 02 33
Gleditschstr. 79 # fax: +49 30 782 02 63
D10823 Berlin # on the air: dk4xp
Germany # in the air: D-1441, D-KOEQ

3879. QRP forum--mailer or newsgroup?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 01:45:45 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Dec20.204545.13457@wb3ffv.wb3ffv.ampr.org>
Source record: 115113

Attention former subscribers to the QRP-L mailing list only:

I recently took a private poll on the QRP mailing list, on a non-binding, unscientific basis, totally "for fun", whether they would prefer to have it as a newsgroup or stay as a mailing list. (This has been a recurring topic almost since the mailing list was started, and continues to simmer.)

The replies have slowed down pretty much, with it running about 3 to 2 in favor of staying as a mailing list. I later realized that the basic premise was flawed; I was only asking the QRPers on the mailing list if they preferred a mailer, when I should really be asking _everyone_ with an interest in a QRP forum what form it should take.

Asking the list alone does not reach everyone with an interest in a QRP forum, since there have been quite a few "defections", with a large number being attributable to the loss of the "digest" function when the mailer moved from think.com to netcom.com. Many people signed up for the mailing list and later unsubscribed, with the vast majority apparently being due to the amount of traffic, losing important e-mail scattered among QRP e-mails, having to pay by the e-mail byte received, having the boss cast an evil eye for reading personal mail while at work, and various combinations thereof. (One person recently stated that his boss told him to unsubscribe!) They enjoyed the QRP forum but couldn't handle the implementation of it as a mailing list.

To be honest and above-board and get a truer, less skewed feeling of the wishes of _everyone_ interested in a QRP forum, I must also ask those who have unsubscribed which they prefer, mailing list or newsgroup. (I would assume that the vast majority of those who have unsubscribed did so because of problems with handling the e-mails. Many made comments when unsubscribing, and those were all along those lines.))

I will make the assumption that a substantial number of unsubscribers still read rec.radio.amateur.homebrew and/or r.r.a.misc, so this is my only way to contact some of you. I hereby solicit your vote: do you prefer a QRP mailing list or newsgroup?

No comments required, but if you wish you can tell me why you unsubscribed--didn't like the topic, too much traffic, etc. You don't have to include any comments on the merit of a mailing list vs. newsgroup--there have been so many of those comments in the past that it's almost unheard of to find a truly new position or fact. All the pros and cons on both sides have been well aired; I'm not the judge

and jury, so you don't have to try and convince me either way. All I want is a vote for one or the other. (Any comments which trickle through will not be retained or recorded.)

To be accurate, this vote should only be among people who were once subscribers to QRP-L and later unsubscribed, and thus have experienced the problems first hand. Please do NOT cast a vote if you were never a subscriber to the mailing list, even if you are interested in having a QRP forum in some form.

Please address your vote directly to me, via private e-mail, and do NOT send a copy of it to the QRP mailing list or to the newsgroup where you find this posting. (This is in accordance with standard netiquette.) The results will be posted later, both on the mailing list as well as r.r.a.h and r.r.a.m. The results will include two tallies--the vote from just the mailing list subscribers as well as the vote from everyone involved.

(A final reminder, this is a private and personal poll, the vote is for informational purposes only, it is a straw poll, is completely nonbinding and unscientific, for my amusement only [do I have enough disclaimers? :-)] and will NOT result in a newsgroup being created if the vote is favorable. If someone ever submits a formal request for a formation of a QRP newsgroup, a formal call for votes will be submitted by some official source.)

73 and Queue Our Pea DE WA8MCQ

wa8mcq@hambbs.wb3ffv.ampr.org

3880. Re: Wierd energy device on WWW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 02:55:28 UTC
From: billb@eskimo.com
Message-ID: <D1544o.BIB@eskimo.com>
Source record: 115021

moritz@ipers1.e-technik.uni-stuttgart.de wrote:
: In article <D0ttM9.AGJ@eskimo.com>, William Beaty <billb@eskimo.com> wrote:
: >The Anomolous Science guys on the Keelynet BBS have just made public
: >a device which seems to be giving more energy out than in

: Has the Internet done you any harm, or why are you waisting bandwidth
: with nonsense?

Nonsense to some is a hobby to others.

The cry of the crank inventor (They called the Wright Brothers crazy!)
is cliche' but still true. All through history there have been amazing
discoveries which were dismissed as crazy. Keep your eye on the
inventions which are obviously impossible. The tiny percentage which are
real will make the time worthwhile. And the rest is extremely entertaining!
Tesla! Rife! Keely! Hendershott! Neuman! Bearden! Follow the "weird
science" underground. Gain a neighborhood "reputation." Pursue the
anomolies ignored by conventional science. Increase your chances of
stumbling across something never before seen. And check out my web page.

--
.....uuuu / oo \ uuuu.....,.....
William Beaty voice:206-781-3320 bbs:206-789-0775 cserv:71241,3623
EE/Programmer/Science exhibit designer http://www.eskimo.com/~billb/
Seattle, WA 98117 billb@eskimo.com SCIENCE HOBBYIST web page

3881. Re: KISS? (Was: IC mixers vs. SRA-1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 08:35:41 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D15JvH.FM@indep1.chi.il.us>
Source record: 115033

In article <656896752wnr@ifwtech.demon.co.uk> G3SEK@ifwtech.demon.co.uk writes:
>The performance side is less certain, though. There are some very
>dubious so-called "KISS" projects published, which are marginal in
>design terms and are almost sure to disappoint (if they ever work at all
>in the hands of a beginner).

Imagine the disappointment of this writer at age 14, having spent over three weeks finding parts for a one-transistor (2N109!) AM broadcast band transmitter, struggling through a first experience reading the danged schematic and wiring the project without any help, then spending weeks trying to debug the non-working mass of pieces-parts without success.

I'd love to find that schematic to see if it was me or the design...

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3882. Re: KISS? (Was: IC mixers vs. SRA-1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 09:37:25 UTC
From: randolph@est.enet.dec.com
Message-ID: <3d9g5v$gg3@mrnews.mro.dec.com>
Source record: 115026

In article <656896752wnr@ifwtech.demon.co.uk>, G3SEK@ifwtech.demon.co.uk (Ian G3SEK) writes...
<snip>
>Myself, I tend to go the other way, including buffer amplifiers, extra
>shielding and decoupling and all kinds of over-engineering, so that the
>finished project has a very good chance of working first time. For
>me, that *is* the simplest and quickest way to homebrew.
<snip>
>Comments please, homebrewers!

No argument here. I do the same thing... when in doubt, add more decoupling. This means one has to understand what the decoupling caps, buffer amps, etc. will do for you, though. Some of W1FB's old articles took the right approach - "if you have this problem, try this and this". If I were a kit maker, I'd keep a log of problems and solutions and include a condensed copy with each kit. From what I hear, most kit makers only supply such info if you phone them with a problem...

The only reason I have any success with homebrew RF circuits is due to experience breadboarding stuff here at work. I can now make educated guesses to solve circuit problems that I would have never been able to figure out years ago, when I first got interested in electronics.

-Tom R. N1OOQ randolph@est.enet.dec.com

3883. WTB: SURPLUS/OLD RADIOS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 10:15:09 UTC
From: Dave AB5S/7 <72227.1640@CompuServe.COM>
Message-ID: <3d8v7d$79c$6@mhadg.production.compuserve.com>
Source record: 115034

****

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I am not a dealer, nor do I resell to

non-US persons.

****

3884. How to measure coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 10:28:35 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941222050004295@posnet.co.uk>
Source record: 115019

In a message of 19 Dec 94 Mark.a.mccuistion wrote to All:

Mam> All I want to do is measure coils.

Mam> Isn't there a _simple_ circuit that can be used to measure the
Mam> microhenries of a coil? I've got a freq counter, and an O-scope, plus
Mam> an old XT with which to measure things. But no circuit.

Mam> Please help with a specific circuit. I don't do well with
Mam> "Just build an oscillator" kind of instruction.

Mam> Thanks. When I get this nut cracked, I can move on to building one of
Mam> the many qrp-circuits I've collected, but haven't been able to do
Mam> 'cause I CAN'T DO COILS!

Hello Mark.

Can I suggest a slightly different approach to your problem? I can't do coils either but there's an easy answer.

The way I work is to wind the coil using the design charts in the ARRL Electronics Data Book. (It was just four dollars when I bought mine years ago). Inside you'll find design charts which tell you what value of inductance resonates at what frequency with a particular value of capacitor. They are vry easy to use, you just lay a ruler across the chart.

Then you look up the number of turns needed for your chosen inductance and wire gauge in another table. There are lists of all the common toroid cores and for air cored coils. It's brilliant!

Alternatively why not get a simple GDO (grid/gate dip oscillator). There are several kits around or you should be able to build one for a few dollars from a magazine design. If you've got a frequency counter then calibration is easy. You can then check the resonance of any LC combination and add/remve turns by trial and error untill it's "on the nose".

Regards Paul G4DCV Internet : paul.whatton@sharpbbs.centron.com
.AmigaBee BBS 2:254/214 Tel (UK)+81 695 5328 * Amiga Ham radio file area*
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3885. Index labs QRP rig problem??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 13:19:05 UTC
From: brunelli_pc@delphi.com
Message-ID: <54yW-85.brunelli_pc@delphi.com>
Source record: 115040

I heard that there was a problem with the index labs rig
and that it was a fairly important flaw for qrp operations.

any info on this would be appreciated. reply here or to

brunelli_pc@delphi.com

thanks
pete brunelli
n1qdq

3886. Rechargeable vs. disposable battries?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 14:14:50 UTC
From: msd@doc.us.dell.com
Message-ID: <3d9d8q$mva@uudell.us.dell.com>
Source record: 115042

Hi there,

Pardon me if this is not the group to post this question to.
I wanted to findout if rechargeable battries are cheaper/economical
then using regular battries. Any comments or experiences are welcome.
I always thought that as much power it takes for battries to recharge, it
works out about the same when you buy disposable ones.

Thanks in Advance.
-msd

3887. Re: Vacuum Variable Caps.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 15:12:56 UTC
From: jwl@cray.com
Message-ID: <1994Dec21.091256.16261@walter.cray.com>
Source record: 115020

Jeffrey Maass (jmaass@freenet.columbus.oh.us) wrote:

: I am assembling parts for a 160-meter amplifier, and will be
: shopping for a couple of vacuum variable capacitors.

: For the tuning capacitor, it looks like I need only about
: 150 pF @ 100KV or 15KV. From looking about in some source, it looks
: like a 300pF (like UCS-300) may be the choice. How is the
: availability of vac. variables in this range? Cost?

: For the loading capacitor, calculations show I need around 500 pF
: (but 650 pF _MUCH_ better) at around 3KV. The rest of the capacitance
: will come from fixed capacitors, but I need about 422 pF to cover
: 1.8 MHz to 2.00 MHz (Pi-L, with plate impedance around 3000 ohms).

: To allow for less-than-perfect antenna loads, I'm looking to allow
: for a bit more loading capacitance range than calculated for the
: ideal case, at least 650 pF, and perhaps as much as 1000 pF.

: I've one reference which shows a suitable 650 pF unit (CMV1-650), but
: I can't recall having seen other references to it being available.
: I recall 750 pF units referenced in articles, and the UCSL-1000
: used in several amplifier construction articles. Can anyone comment
: on the current availability of any of these units, and likely
: costs?

: What are the most-available vacuum variable and fixed vacuum
: capacitors available used or surplus?

: Thanks for any information!
: --
: Jeff Maass NW of Columbus Ohio Amateur Radio K8ND
: USPSA/IPSC # L-1192

Check out the old gear and junk (swap) net on 7275 Saturday mornings.
We get checkins from all over the eastern half of the U.S. I don't
know the time for sure, it seems to jump around a bit. Listen from
0830 EST on and you should hear something. There are quite a few amp builders
that listen in, but don't necessarily advertise that might help you,
and anyone else that might want to listen.

73,
Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO

Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3888. Re: Building [pirate] station from Radio Shack?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 16:14:45 UTC
From: ornitz@kodaki.kodak.com
Message-ID: <3d9k9l$5mn@kodak.rdcs.Kodak.COM>
Source record: 115022
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,alt.radio.pirate

In article <3d0s3b$rlh@perot.mtsu.edu> stevekh@knuth.mtse.edu writes:
> The thing is, the best way to go pirate
>is tto know exactly what the FCC Rules & Regs are, and have a good
>background in basic theory. You can then find a way to go around
>the rules.
>
>But, the simple way: There are companies that make FM transmitters
>with stereo RCA inputs, and have the maximum unlicensed output:
>200mW. Ramesy Electronics makes one of these, called the FM-10.
> / _|_ _| __| / | __| / | | | (stevekh@knuth.mtsu.edu)

Steve, you need to follow your own advice. I strongly suggest you get a copy of Title 47 of the Code of Federal Regulations and read Part 15 before you continue to spread such incorrect information and make a fool of yourself.

For unlicensed transmitters operating on the commercial FM broadcast band, maximum field strength at a specified distance is regulated - not transmitter power. At one time, at least 25 years ago, a power limit of 100 milliwatts of input power was permissible. It was never as high as 200 milliwatts. Now the limits are a maximum field strength of 250 microvolts per meter measured at three meters from the transmitting antenna.

With a conventional quarter-wave ground plane antenna, this works out to a transmitter power output of approximately 3 NANOWATTS. Most people report an effective range of perhaps 75 feet which is fairly consistant with theoretical calculations based on assumptions of typical receiver sensitivity and antennas.

Ramsey seems to be very careful in stating the federal regulations but I believe they never actually say the FM-10 is legal. Its power output is about a million times too high to be legal with a typical antenna, and it is well below the 200 milliwatts you erroneously stated.

Barry L. Ornitz ornitz@emn.com

3889. Re: Tube Input Impedance ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 16:41:04 UTC
From: bart@wb6hqk.ampr.org
Message-ID: <D166CH.Ftu@wb6hqk.ampr.org>
Source record: 115023

In article <1994Dec20.144417.23536@ccd.harris.com>,
Doug Snowden <dsnowden@ccd.harris.com> wrote:
>What is the method of calculating the input impedance for a cathode
>driven (grounded grid) tube or tubes ?
>
I couldn't find a reference in either my 1943 Terman or old ARRL handbooks.

I derived the class A case as follows:

Ic = cathode current
Ip = plate current
Vc = cathode drive voltage
Vp = plate voltage
Rp = plate load resistance
u = tube transconductance at the bias point
j = sqrt(-1)
w = radian frequency = 2 * 3.14149 * f (Hz)
Zc = cathode input impedance
Ccg= cathode to grid capacitance
Ccp= cathode to plate capacitance
Cpg= plate to grid capacitance

The voltages and currents are variations about the bias point (small signal).

```
Ic = Vc * u + Vc * j * w * Ccg - Vc * u * Rp * j * w * Ccp
^^^^^^ ^^^^^^^^^^^^^^^^ ^^^^^^^^^^^^^^^^^^^^^^^^^
tube cathode to grid plate to cathode
gain capacitance capacitance
```

```
Vc 1
Zc = ---- = ----------------------------------
Ic j * w * ( Ccg - u * Rp * Ccp ) + u
```

For low frequencies the input impedance is just 1/u. As the frequency
increases, the input impedance can be either inductive or capacitive
depending on which term in the denominator dominates. One of the
advantages of grounded grid operation is the shielding of the input
circuit from the plate circuit by the grounded grid but I don't have
typical figures for tubes typically used in such service.

Hope this helps but please check the model for correctness and applicability
before you use it for design.

bart wb6hqk

bart@wb6hqk.ampr.org

3890. Re: Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 16:51:25 UTC
From: leblancm@gel.ulaval.ca
Message-ID: <3d9med$dhk@goudron.gel.ulaval.ca>
Source record: 115024

A short comment on the use of VHF tubes (valves?) in HF amplifiers: since those devices have gain at VHF frequencies, you must be aware of the possibility of parasitic oscillations at VHF or higher. There was a good paper on that topic in QST a few years ago but I don't have the reference on hand.

73

Mario Le Blanc, VE2GTP, RF engineer

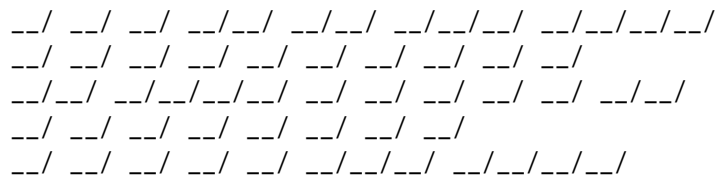
3891. Re: Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 18:18:31 UTC
From: phb@syseng1.melpar.esys.com
Message-ID: <phb.788033911@melpar>
Source record: 115025

leblancm@gel.ulaval.ca (Mario Leblanc) writes:

>A short comment on the use of VHF tubes (valves?) in HF amplifiers: since those
>devices have gain at VHF frequencies, you must be aware of the possibility of parasitic
>oscillations at VHF or higher. There was a good paper on that topic in QST a few
>years ago but I don't have the reference on hand.

Even the venerable 6146B, usable up to 2 meters, can exhibit problems
with parasitics whether operated on HF, 6 or 2. The older ARRL Handbooks
discuss tube parasitics in some detail, as do the now out-of-print V.H.F.
Manual editions (Tilton) and the RSGB VHF Manual. If you're doing your
own amplifier design, spend some time evaluating this phenomenon *before*
you build it. If you're copying someone else's design, be wary of making
alterations which might affect stray circuit capacitance (such as substi-
tuting a different tube socket, etc.).



(|_|) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
| |) Principal Systems Engineer Telephone: (703) 560-5000 x2062

3892. Where can I get Info about Homing Device?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 18:57:38 UTC
From: c23mkb@kocrsv01.delcoelect.com
Message-ID: <3d9tr2$7kd@kocrsv08.delcoelect.com>
Source record: 115027
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

Hello Folks,

I was wondering where I would get some info about Homing Devices? Since most of you may be involved in some kind of pet-projects at home, I thought I will pose this question to you.

I am interested in a device which includes a set of transmitter and a receiver. I am looking for a 100-200 meters range and it should be preferably radio based technology. The receiver should be able to track down the transmitter from a distance. I checked all the local and Indy stores for this kind of device, but I am out-a-luck.

If any body has any pointers (I am also willing to build it on my own), I would be greatful to you. Any pointers to Electronics Projects Book will also be of great help.

Thanks once again in advance for any kind of help.

Mahesh Bagade

3893. Re: How to measure coils?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 20:00:17 UTC
From: dtiller@rmc.edu
Message-ID: <3da1gh$rrq@gnd0.rmc.edu>
Source record: 114997

mark.a.mccuistion (mam@cbnews.cb.att.com) wrote:
: All I want to do is measure coils.

: Isn't there a _simple_ circuit that can be used to measure the microhenries
: of a coil? I've got a freq counter, and an O-scope, plus an old XT with
: which to measure things. But no circuit.

MCM electronics sells a multimeter that "does coils". It also "does caps",
volts, amps, Ohms, and Beta of transistors. All for about $60, as I recall.

--
David Tiller | Network Administrator | Voice: (804) 752-3710 |
dtiller@rmc.edu | n2kau/4 | Randolph-Macon College| Fax: (804) 752-7231 |
Don't let your SKS get | P.O. Box 5005 | ICBM: 37d 42' 43.75" N |
"Tainted with Defilement!" | Ashland, Va 23005 | 77d 31' 32.19" W |

3894. Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 21:25:16 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941222131312299@posnet.co.uk>
Source record: 115047

Hello Joseph

I've built the Hamcomm interface so I hope I can be of some help. Incidentally I, like many others, built it using "ugly" point to point wiring /inside/ the "D" plug cover.

In a message of 20 Dec 94 Joseph Testa wrote to All:

JT> I picked up a copy of Hamcom30 and am going to build the circuit for JT> decoding. I have come up with a couple of questions:

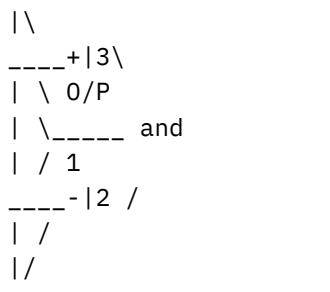
JT> 1. The 100K Ohm resistors, what wattage should i use?

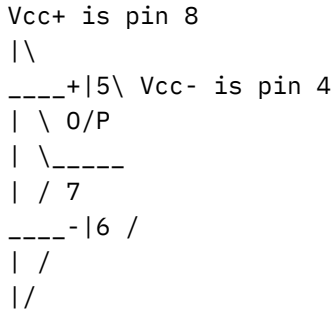
A quick "back of the envelope" application of ohms law suggests as small as possible. After all if you placed a 100k resistor directly across a 12V power supply from W=V^2/R it would only dissipate a little over 1/100 of a watt.

JT> 2. I could not find a TL701 op amp but found a TL702, can I use JT> it instead (i think it is just a dual Tl701 in 1 chip,

I'm not sure about a TL701 and TL702, I've never heard of those numbers. Do you mean TL071 and TL072? If so the TL072 is indeed a dual op amp. The connections are normal for a dual:

TL072:





Almost any op-amp will work OK in the Hamcomm circuit. The only problem you might have is that the op-amp gets its power from the serial port. Some

op-amps may not work because there won't be enough current available. Any FET op-amp should work fine so to answer your question half a TL072 should wor great (it's a BIFET).

Other (single) op-amps that should also work OK include: TL061, LF351, LF356 (I'm using this), LF355 etc etc.

Regards Paul G4DCV. Internet :paul.whatton@sharpbbs.centron.com ...
Amiga Amateur Radio User Group. Free Membership. Netmail me for details.
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3895. KISS? (Was: IC mixers vs. SRA-1)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 22:30:54 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941222131312300@posnet.co.uk>
Source record: 115048

In a message of 20 Dec 94 Ian G3sek wrote to G4DCV:

IG> But it's vitally important that early experiences of homebrewing are
IG> *good* ones, both in the construction and in the eventual performance
IG> of the gear. Despite its drawbacks, I think that on balance the "NE602"
IG> approach is a good thing because it makes simple receiver projects very
IG> easy to build.

Thanks for the reply Ian. I agree in principal with what you say. I think there are many complex reasons why we homebrew. When I first got my licence there were few VHF SSB black boxes available (only the Liner 2 I think). The performance of that device certainly left some room for improvement (g).

But even if I had wanted to buy one, as a schoolboy the cost ensured it was out of the question. So in order to get on the air at all I was fortunate enough to be forced to homebrew. Now I homebrew because it still provides a very real thrill when something eventually works. I can't see much satisfation in buying an off-the-shelf station.

But I also soon realised from the nasty noises that came out of my homemade convertor (G3HBW with untuned bipolar front end!) that I wanted to build high peformance equipment. You could say that I'd wasted my time building that converter, or you could view it as I do as the start of a learning curve

IG> The performance side is less certain, though. There are some very IG>
dubious so-called "KISS" projects published, which are marginal in IG>
design terms and are almost sure to disappoint (if they ever work at IG>
all in the hands of a beginner).

Why then have the RSGB published so many /lousy/ designs? For example how about that BF180 wide-band pre-amp that was in the VHF Manual for years and years? Or the 2C39 23cms cavity using a die-cast box that /nobody/ ever made work (g).

There's a paradox here. Without a KISS start I would never have gained the confidence to build better stuff. But beginners don't usually have the undestanding to realise the limitations of their simple circuit. I still build "dirty" KISS circuits, usually when I need something temporary. But now I (ometimes) have some understanding of the limitations. KISS is actually more valuable for an experienced constructor than for a beginner.

IG> In particular I would strongly criticize the "fewest possible IG>
component" design approach (design? huh!), especially when it's allied IG>
with some other form of performance handicap such as QRP. This is the IG>
high road to disillusionment with homebrewing.

IG> There's a difference between economy of design and the mindless pursuit
IG> of so-called simplicity. People who are trying to follow a published
IG> design (and are thus putting their trust in the designer and author)
IG> would far rather use a few extra components to be sure that the
IG> finished project will work reliably. Or at least, they would if given
IG> the choice.

IG> Myself, I tend to go the other way, including buffer amplifiers, extra
IG> shielding and decoupling and all kinds of over-engineering, so that the
IG> finished project has a very good chance of working first time. For me,
IG> that *is* the simplest and quickest way to homebrew.

IG> In other words, the whole "Keep It Simple, Stupid" ethos seems to
IG> contain some serious internal contradictions - or at the very least,
IG> some dangerous pitfalls.

Again I largely agree with you. But I think there's a difference between a competent design and the pursuit of un-necessary engineering excellence. The latter is highly admirable but I can think of any number of amateur projects (usually state-of-the-art receivers) that amateur friends have either lst interest in or are still, many years later, building.

Take John, G4FRX's famous 4CX250B amplifier control circuits. I can't argue with his design philosophy /but/ having built several amps overthe years I know that I'd simply never have got on the air if I'd tried to build his design. It was simply too complex for me to build in the time I had availabl. Instead I used old fashioned techniques to build the best power supply I could with my available knowledge and time.

Now you could argue my approach (not KISS but certainly simpler) is perhaps irresponsible and that stations shouldn't be allowed on the bands with less than perfect amplifiers. I decided to trade simplicity for a little less linearity and therefore a little extra (of your) band. But if we all /had/ o make amplifiers to John's philosophy then I suggest no-one would ever be on the bands to work!

IG> Here are three questions to keep you entertained over the holiday: IG>
1. Why "Keep It Simple"?
IG> 2. Who's "Stupid"?
IG> 3. What *is* "appropriate technology" in ham homebrewing?

You academic you! There is of course no /right/ answer. One has to make an intelligent assesment of a design and of its suitability for a particular application. Whether the RAE empowers even experienced amateurs to make that evaluation is another question?

Regards Paul G4DCV. Internet :paul.whatton@sharpbbs.centron.com
... Amiga Amateur Radio User Group. Free Membership. Netmail me for details.
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3896. Looking for info

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 22:48:44 UTC
From: markcarl@plains.NoDak.edu
Message-ID: <D16nD8.sHL@ns1.nodak.edu>
Source record: 115028

[No readable article body recovered]

3897. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 23:27:08 UTC
From: sorgatz@avatar.tti.com
Message-ID: <1994Dec21.232708.9976@ttinews.tti.com>
Source record: 115029

In article <3d488f$hkj@acme.freenet.columbus.oh.us> jtesta@freenet.columbus.oh.us (Joseph Testa) writes:
>
>I have a TV that decided to go to the grave. The picture has 1 horizontal
>line through the middle and since it is > 10 years old (13 inch), i decided
>to buy a new one. Is there anything I can do with the parts? (as a amateur
>radio operator, i just can't bring myself to throw it away). If nothing
>else i guess i can practice de-soldering. I know there is some real
>DANGEROUS voltage in there, so any hints on how to NOT electrocute
>myself would be appreciated also.
>
>joe

First off, most modern vintage tv's have few if any useful parts, but
assuming you want to try and practice your desoldering skills, I would
recommend you make a simple modification that will eliminate the hazard
of electrocution: CUT OFF THE AC LINECORD! Simple huh?

73!

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +------------------------------+
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com *Eliminate net-spam & cascades!*
3100 Ocean Park Blvd. Santa Monica, CA 90405 +------------------------------+
(THE OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

3898. AmSoft 1/95 CD-ROM Press Release 2

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-21 23:30:17 UTC
From: amsoft@epix.net
Message-ID: <3dadq9$50v@grape.epix.net>
Source record: 115030
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

The Jan 95 AmSoft CD-ROM will be shipping December 23, 1994.
Cost is $39 plus shipping $3 USA, $5 Foreign. Over 20,000
files for amateur radio. Plus the CALLSIGN call book, and
AMCALL the new logbook from AmSoft that will auto log from
the CD for you. Over 1,350 Radio Mods. The latest HST images.
Over 700 Megabytes of Amateur Radio Software packed into 1 CD.

Version 4.0 Callsign will search for US & Foreign amateurs by
CALL or partial CALL
LAST NAME, FIRST NAME, or partial NAME
STATE, CITY or partial CITY
ZIP CODE or partial ZIP CODE
Create Avery label mailing lists
Create QSL address labels
When used with AmCall Logbook, will create your QSl contact information labels.

Help locate lost & missing children too. The complete list of
1,100 .gif images from the Heidi Search Center is constantly
maintained with up to the minute changes shown on the WWW at
http://www.halcyon.com./alt.missing-kids.gifs

This CD is published every 4 months without delay every JANUARY, MAY, & SEPTEMBER.

If you would like to know what others think about the AmSoft CD-ROM then read what
the authors of Amatuer Radio & Electronics magazines are writing:

Popular Electronics January 1995 pages 8, & 92
Nuts & Volts November 94 pages 21, 22, & 23
CQ November 1994 page 97
World Radio September 1994 (Hams at Seaside article)
Communication Quarterly Fall 1994 pages 41-52 & 95-98
Monitoring Times August 1994 page 91
The Amateur Communicator May/June 1994 page 23
73 Amateur Radio Today March 94 page 88
Monitoring Times March 1994 page 96
World Radio February 1994 page 70
CQ December 1993 (Karl Thurber article)
QST December 1993 page 90
Monitoring Times August 1993 pages 98, & 99
Popular Electronics July 1993 pages 53, 60, & 96
CQ March 1993 page 77

If you would like to order with Visa/MasterCard call 717-938-8249
If you want to fax your order in fax to 717-938-6767
Or Email us your order at amsoft@epix.net

If you would like to get a FREE copy of the January 1995 AmSoft CD-ROM newsletter
please leave me your mail or E-mail information or internet id at: amsoft@epix.net
---
Reply to: Pete KC3TL at (amsoft@epix.net) or call 717-938-8249

3899. What do you use for test equipment?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 01:31:02 UTC
From: paulbreed@aol.com
Message-ID: <3daksm$9o4@newsbf02.news.aol.com>
Source record: 115038

I have worked for 12 years as an Embedded Micro,
HArdware/Software/Firmware
engineer and I have just taken a new Job that is all software. This has rekindled the itch to play with my soldering Iron on a hobby basis. I've done a fair amount of digital and switching power supply (Including Inductors and Transformers) design.
I have done absolutly no RF work.

I would like to do some homebrew HF stuff and I was wondering what the experienced homebrewers use for test equipment????

Any good leads on used Test Equipment?

Beyond the basic EE tools like DVM, Soldering Iron, O-Scope what is needed?

My initial list of additional RF stuff was:
Freq Counter
Signal Generator (2 maybe?)
Misc Coax Plumbing
Attenuator(s)
Dummy Load
And Some thing to use as a spectrum analyzer.

What is a must, and what is nice and what is not necessary?

What is the cheapest way to perform the spectrum analyzer function???

Thanks in advance (Please Post the answers so all can see)

PAul Breed

3900. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 01:37:28 UTC
From: jdc3538@ultb.isc.rit.edu
Message-ID: <1994Dec22.013728.8538@ultb.isc.rit.edu>
Source record: 115031
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <3d7req$m1d@bronze.lcs.mit.edu> moisan@bronze.lcs.mit.edu (David Moisan) writes:
>In article <3d6psg$4av@acme.freenet.columbus.oh.us>,
>Joseph Testa <jtesta@freenet.columbus.oh.us> wrote:
>>
>>I picked up a copy of Hamcom30 and am going to build the circuit
>
>> 2. I could not find a TL701 op amp but found a TL702, can I use
>
>No, that should be a _TL071_. It's a single op-amp whose pinout will
>match the 741. For that matter, if you've a 741 around, you can use it
>to test the circuit until you get the better '071. After three years,
>I've yet to change the 741 in mine for the other chip.

How does a "better" op-amp improve the Hamcomm circuit's performance?
I built the 741 op-amp version and it works well.

73...Jim N2VNO
>
>>
>>Thanx in advance
>>joe, n8xct, attempting 1st home built project :)
>>
>Good luck. I found it to be a really fun and interesting project as well!
>
>
>
>--
>| David Moisan, N1KGH /^_/^\ moisan@bronze.lcs.mit.edu |
>| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
>| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
>| |

3901. Weather broadcaster.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 02:29:33 UTC
From: shields@nps.navy.mil
Message-ID: <shields.24.0A60207F@nps.navy.mil>
Source record: 115043

A while back I read somewhere about a HAM project that transmitted
weather information from a ballon. I am interested in doing something similar,
I want to put a transmitter atop several of the local mountains to transmit
temperature, dewpoint, wind speed, and wind direction. I have two questions:
First, is this leagal -- you are really broadcasting -- I thought about
getting around the problem by making it a repeater, and when it gave its
callsign, have it transmit the weather info as well, but this would complicate
design.
Second, does anyone have any pointers to designs for this type of equipment?
Thanks.
Mike Shields
shields@nps.navy.mil

3902. Re: Parts & kits (4)

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 02:48:50 UTC
From: bdemers@bu.edu
Message-ID: <3dapei$t0k@news.bu.edu>
Source record: 115049

One more...

Kanga Kits
c/o Bill Kelsey
3521 Spring Lake Drive
Findlay, Ohio 45840
419-423-5643
QRP kits and parts.

Brian Carling (brian.carling@acenet.com) wrote:
: From: brian.carling@acenet.com

: DC Electronics (800) 423-0070 / (602) 945-7736
: P.O. Box 3203 FAX: (602) 994-1707
: Scottsdale, AZ 85271 Components. Many ICs.

: Debco Electronics (800) 423-4499
: 4025 Edwards Road
: Cincinatti, OH 45209 Components, especially chips etc.

: DH Distributors (316) 684-0050
: P.O. Box 48623
: Wichita, KS 67201 Tubes, radio, TV, industrial

: Digi-key (800) 344-4538
: 701 Brooks Avenue S. or 1-800-DIGI-KEY
: P.O. Box 677
: Thief River Falls, MN 56701 Parts

: Ditek Industries (800) 762-9328
: *** NEED ADDRESS ***
: (CW paddles, keyers etc.)

: DWM Enterprises (No number listed)
: 1709 N. West Avenue #103
: Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

: DX Radio Supply (610) 273-7823
: Box 360 Call or write for catalog
: Wagontown, PA 19376 Kit retailer. Ramsey, etc.

: Eidson Crystal Company (No number listed)
: Address needed Mr. Merill Eidson
: Temple, TX Crystals for older rigs.

: ELECTRIC RADIO
: AM International publishes a column in ELECTRIC RADIO magazine, which is
: probably the best source for articles on vintage amateur radio and AM.

: A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

: Electrogadgets Inc.
: P.O. Box 2065
: Morris Township, NJ 07962 Digital voice recorder kits $20.00

: Electron Tube Enterprises (802) 879-0611
: Box 311
: Essex, VT 05451 Tubes

: Electronics Exchange (314) 426-3056
: No address given
: St. Louis, MO Electronics suurplus. Call for catalog.

: Electronic Goldmine (602) 451-7454
: P.O. Box 5408
: Scottsdale, AZ 85261 Kits, parts etc.

: Electronic Rainbow (317) 291-7262 / -7269 = FAX
: 6254 LaPas Trail
: Indianapolis, IN 46268 Various electronics kits

: Elktronics Northeast Co. (603) 525-4001
: Rt. 1 Box 789
: Hancock, NH 03449 VFO kit, RF amp, filters etc.)

: William Erickson, W4UIL No phone number given
: 3905 Cherrywood Lane
: Annandale, VA 22003-1901 Tubes, older radios etc.

: E.S.R.C. (407) 735-3397
: P.O. Box 1192
: Delray Beach, FL 33447-1192 Buy, sell, swap tubes of all kinds

: Fair Radio Sales (419) 227-6573
: 1016 E. Eureka (419) 223-2196 FAX: (419) 227-1313
: Box 1105 Parts, transformers, power supplies,
: Lima, OH 45802 Surplus and gov't surplus radios etc.

: Fala Electronics (No number listed) send s.a.s.e.
: P.O. Box 1376-1
: Milwaukee, WI 53201 Vacuum tubes

: Falkner Enterprises of America Inc.
: 312 River Street (319) 687-2479
: Sabula, IA 52070 Batteries, electronic parts, catalog

: ---
: • SLMR 2.1a • Any moderators here? <WHAP!> Any more??

3903. Yeasu FT-727 Software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 03:09:58 UTC
From: kb2ear@kb2ear.overleaf.com
Message-ID: <3daqm6$1et@kb2ear.overleaf.com>
Source record: 115032
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Anyone know where I can get software to control my Yeasu FT-727 via the
CAT port?

Thanks & 73,
--
Scott R. Weis KB2EAR, EMT-A
Kendall Park First Aid & Rescue Squad
Internet: kb2ear@kb2ear.overleaf.com
Packet: KB2EAR @ KB2EAR.NJ.USA.NA
Snail Mail: 10 Palmer Rd., Kendall Park, NJ, 08824-1228
Phone: +1 908 297 0469

3904. Re: What do you use for test equipment?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 03:16:56 UTC
From: little@iamu.chi.dec.com
Message-ID: <3dar38$5m@nntpd.lkg.dec.com>
Source record: 115058

In article <3daksm$9o4@newsbf02.news.aol.com>, paulbreed@aol.com (PaulBreed) writes:
|>Beyond the basic EE tools like DVM, Soldering Iron, O-Scope what is
|>needed?

I hate to say it again, but a dipper is a really handy instrument, besides being one of the cheaper test instruments you can own. Great for finding resonant frequencies, determining the values of coils and caps, finding the velocity factor of coax, etc. For $20-$50 you can't find a more versatil instrument.

73,
Todd
N9MWB

3905. Re: Weather broadcaster.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 06:33:12 UTC
From: brax@ava.hut.fi
Message-ID: <brax.4.2EF91DA8@ava.hut.fi>
Source record: 115035

(Michael K. Shields) writes:

> Second, does anyone have any pointers to designs for this type

Some of the best remotedly operated weather stations are made here in Finland
by a company called Vaisala (they are sending some of them to Mars, and that
is what I call remote!). All their models are not necessarily space-priced;
we have one of them on our rooftop here at HUT Space Lab. If you are
interested, their contact address is

Vaisala
P.O. Box 26
FIN-00421 Helsinki
FINLAND

Fax: +358-0-8949 210

- not a commercial announcement, for information only -

Matti Brax
Helsinki University of Technology
Lab. of Space Technology

3906. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 06:44:24 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D179E0.18I@indep1.chi.il.us>
Source record: 115036

In article <1994Dec21.232708.9976@ttinews.tti.com> sorgatz@avatar.tti.com (Erik K.Sorgatz) writes:
>recommend you make a simple modification that will eliminate the hazard
>of electrocution: CUT OFF THE AC LINECORD! Simple huh?

But make sure it's unplugged first... :-)

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3907. does anyone know how to build a 44o j-pole?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 07:14:00 UTC
From: Mike Lyon <mlyon@rahul.net>
Message-ID: <3db8vo$efv@hustle.rahul.net>
Source record: 115037

i was wondering if anyone out there knows how to build a 440 j-pole. all
i need are the dimenisions for the 2 elements and the number of winds of
wire that go around the element. i also need to know how far the coil
needs go up. if anyone has the info for this it would be greatly appreciated.
73

Mike Lyon
KE6MRE
--
//////////////////////
| Mike Lyon |
| KE6MRE |
| mlyon@rahul.net |

3908. Amplifier Tank Circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 08:10:40 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941223100619319@posnet.co.uk>
Source record: 115039

In a message of 21 Dec 94 Paul H. Bock wrote to All:

PHB> leblancm@gel.ulaval.ca (Mario Leblanc) writes:

>> A short comment on the use of VHF tubes (valves?) in HF amplifiers:
>> since tho devices have gain at VHF frequencies, you must be aware of the
>> possibility of oscillations at VHF or higher. There was a good paper on
>> that topic in QST a years ago but I don't have the reference on hand.

PHB> Even the venerable 6146B, usable up to 2 meters, can exhibit
PHB> problems with parasitics whether operated on HF, 6 or 2. The older
PHB> ARRL Handbooks discuss tube parasitics in some detail, as do the now
PHB> out-of-print V.H.F. Manual editions (Tilton) and the RSGB VHF Manual.
PHB> If you're doing your own amplifier design, spend some time evaluating
PHB> this phenomenon *before* you build it. If you're copying someone
PHB> else's design, be wary of making alterations which might affect stray
PHB> circuit capacitance (such as substi- tuting a different tube socket,
PHB> etc.).

Hello Paul

This thread started with a question about using 8877 VHF /triodes/ at HF. Most of the problems of instability I've experienced have been with much higher gain tetrode amplifiers. I've had several problems with 6146Bs in HF amplifiers over the years. But triodes with their lower inherent gain are muc easier to use (and have the advantage of much simpler power supplies).

I used to find myself holding amplifier clinics with constructors bringing round all manner of shapes and sizes they had built. Most were based on 4CX250B amplifiers for VHF/UHF and several were impressive power oscillators! The problem was usually either the use of the wrong base type, therefore inorrect screen decoupling or poor layout. Poor screen decoupling isn't a problem with an 8877 of course.

Regards Paul. Internet : paul.whatton@sharpbbs.centron.com ... AmigaBee BBS 2:254/214 Tel 081 695 5328 * Amiga Ham radio file area *
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

3909. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 08:33:17 UTC
From: bcieslak@mkelan5.remnet.ab.com
Message-ID: <bcieslak.39.00088DF3@mkelan5.remnet.ab.com>
Source record: 115060
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

>>I picked up a copy of Hamcom30 and am going to build the circuit
>>for decoding. I have come up with a couple of questions:
>> 1. The 100K Ohm resistors, what wattage should i use?

>Whatever you have. The smallest will do.

>> 2. I could not find a TL701 op amp but found a TL702, can I use
>> it instead (i think it is just a dual Tl701 in 1 chip,
>> please set me on the stright and narrow if i am out in
>> left field).

>I don't know what a TL701 is but i think the type is wrong.
>You need a TL071. See the difference ? :-)
I used just a plain old radio shack 1458 and it worked fine.....minor wiring
changed due to pinout difference required.

Problems I ran into are results of my 286-12Mhz machine not being fast enough

73,
Brian - AE9K

3910. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 09:42:16 UTC
From: schro@norton.sni.de
Message-ID: <3dbhlo$rbd@nanette.pdb.sni.de>
Source record: 115041
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In <3d6psg$4av@acme.freenet.columbus.oh.us> jtesta@freenet.columbus.oh.us (Joseph Testa) writes:

>I picked up a copy of Hamcom30 and am going to build the circuit
>for decoding. I have come up with a couple of questions:
> 1. The 100K Ohm resistors, what wattage should i use?

Whatever you have. The smallest will do.

> 2. I could not find a TL701 op amp but found a TL702, can I use
> it instead (i think it is just a dual Tl701 in 1 chip,
> please set me on the stright and narrow if i am out in
> left field).

I don't know what a TL701 is but i think the type is wrong.
You need a TL071. See the difference ? :-)

73 de Django
DL5YEC

>Thanx in advance
>joe, n8xct, attempting 1st home built project :)

>--
>Joseph S. Testa (no not the Franklin County, OH auditor)
>This is in hex for YOUR benefit.
>54 68 65 20 65 76 65 72 2D 74 68 69 6E 6B 69 6E 67 0A
>50 72 6F 67 72 61 6D 6D 65 72 0A

3911. Re: Wierd energy device on WWW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 11:58:31 UTC
From: moritz@ipers1.e-technik.uni-stuttgart.de
Message-ID: <3dbpl7$rpv@info4.rus.uni-stuttgart.de>
Source record: 115052

>The cry of the crank inventor (They called the Wright Brothers crazy!)
>is cliche' but still true. All through history there have been amazing
>discoveries which were dismissed as crazy.

Nothing wrong with inventions,
but there are a few facts, which are true beyond doubt,
for example:

- There is presently human life on earth,

-The ODX for terestial QSO's is limited to about 20000 km,
due to the earth being spherical and of finite diameter

-There never will be a perpetuum mobile.

Back to radios now, 73, Moritz DL5UH

3912. Re: WTB: SURPLUS/OLD RADIOS

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 13:07:20 UTC
From: gsymonds@hpb.hwc.ca
Message-ID: <3dbtm8$ps8@m.ehd.hwc.ca>
Source record: 115046

Dave AB5S/7 (72227.1640@CompuServe.COM) wrote:
: **

: I am not a dealer, nor do I resell to

: non-US persons.

: **

Not exactly the NAFTA spirit, eh? I assume this applies to buying too!

Seasons greetings.

Gord Symonds

3913. Re: What do you use for test equipment?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 13:25:32 UTC
From: parnass@nwsf.ih.att.com
Message-ID: <D17ryK.MqA@nntpa.cb.att.com>
Source record: 115044

In article <3daksm$9o4@newsbf02.news.aol.com>,
PaulBreed <paulbreed@aol.com> wrote:

>....I have done absolutly no RF work.
>
>I would like to do some homebrew HF stuff and I was wondering what the
>experienced homebrewers use for test equipment????
>
>Any good leads on used Test Equipment?
>
>Beyond the basic EE tools like DVM, Soldering Iron, O-Scope what is
>needed?

Aside from the basic tools you mentioned, I've gotten the most
usage from:

simple 455 kHz crystal controlled IF signal generator (GE)
simple 10.7 MHz crystal controlled IF signal
generator (Motorola)
RF signal generators (mil surplus, B&K)
digital L & C meter (Heathkit), should have gotten this
years ago!
freq counter (Fluke, Heathkit, and HP)
analog VTVM (RCA/VIZ Master VoltOhmyst)
0 - 2 MHz function/sweep generator (Wavetek)
battery operated audio amp (homebrew)

A lot of my test equipment is bought used at hamfests and some
needed fixing. The price for a *new* piece of high quality
test gear is often out of the hobby range.

I do more modification & repair on commercial equipment than
homebrew from scratch, because I see no need to "reinvent the wheel,"
although I've done that, too. :-)
--

==========
Copyright 1994, Bob Parnass, AJ9S
AT&T Bell Laboratories - parnass@ihlpf.att.com - (708)979-5414

3914. Fm Radio Transmitter

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 14:13:00 UTC
From: joe.taylor@woodybbs.com
Message-ID: <93.3892.7584.0NFB8133@woodybbs.com>
Source record: 115045

Hi Jeff:
Most of the transmitters have to have a license. What kind of license
do you plan to work with? There are a few mini-transmitters that can be
tuned to use on the 88 - 108 Mhz broadcast band. Usually you can find
these in kit or semi-kit form in radio magazines. They are primarily for
"around the house" use.... short range. Remember that you "must not"
interfere with other receiver's if you put one of these on-the-air and you
never know when you will be transmitting on what appears to be a clear
frequency to you, but turns out to be a distant station that you neighbor
has spent $300 to be able to get- buying tower, pre-amps and yagi beam
antenna. Be careful not to get in trouble.....
Joe N4NAS

Maybe Jeff you need to get a ham license!!!

 BgNet 1.0 12 049/000: Pipeline BBS - Glasgow, Ky - 502-651-2556

3915. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 15:13:26 UTC
From: johnl@world.std.com
Message-ID: <D17wyE.LyG@world.std.com>
Source record: 115054
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <bcieslak.39.00088DF3@mkelan5.remnet.ab.com>,
>
>
>>>I picked up a copy of Hamcom30 and am going to build the circuit
>>>for decoding. I have come up with a couple of questions:
>
>>> 2. I could not find a TL701 op amp but found a TL702, can I use
>>> it instead (i think it is just a dual Tl701 in 1 chip,

The op-amp type is not at all critical.
Just about anything should work.
I used a plain old 741.

This same interface can be used to receive color
images sent over ham radio. The software is available
by ftp from oak.oakland.edu in
/pub/hamradio/pc/digital/atv/ezsstv.zip

73,
John WB2OSZ

3916. Re: Variac to adjust soldering temperature

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 15:46:52 UTC
From: drted@ix.netcom.com
Message-ID: <3dc71c$q4a@ixnews2.ix.netcom.com>
Source record: 115062

In <D0rF5A.FJB@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:

>
>Ted Viens (drted@ix.netcom.com) wrote:
>
>: Fair Radio Sales is selling a gov't surplus Weller kit for 70.00. These
>: are temperature controlled tips in the 500, 600, and 700 degree range.
>: All the parts are still currently available and a comparable kit today
>: would cost several hundred dollars. I don't have the phone number or
>
>Hmmm. This seems high, unless they are pretty fancy kits. You can get a
----
I should get Fair Radio Sales to cut me a deal, still, I love gratuitously
promoting a good deal. This kit is a never used Hermetically sealed
(really) kit made ten or so years ago for the military. It includes about
20 parts. I will list only the Weller part numbers...

Large parts: WTCPK TCP-24G tip with EC234 heater BPS-24 SFG-1
DS-TCP desoldering tip with sleeve and DST4 tip.
Smaller parts:
Soldering Tips: PTA6 PTB6 PTC6 PTC7 PTL7 PTKX6 PTKX7 PTBCL5
Desoldering Tips: DST1 DST2 DST3 DST4 DST5 DST6
Specialty Tips: PTDTS5 DIT1 FPT1 < All mounted on sleeves.

I Don't have a Weller catalog or price list, But I feel sure that this is
more than the $140 station mentioned below.
I might as well become a slave to commerce and give the Fair Radio Sales
phone number: 419-227-6573 or 419-223-2196 the part number is #WTCPK.
I leave the rest of Tom's article because it is good advice...

>new Weller WTCPT station from Newark for about $140. And with the move to
>surface mount, a lot of old WTCP stations have come onto the surplus
>market--assembly houses have scrapped them. The one I got 18 years ago is
>still running fine, and I paid $5 or $10 for it at that time; since then
>I've gotten a couple more for not more than $5. Things to look for in a
>used one: the sleeve that holds the tip in should be removeable by hand
>(not overtightened) and it should slide smoothly off the heating element.
>If you can plug it in to try it, with a tip in it, after about one minute
>it should melt solder, and in a couple minutes, it should start cycling:
>you can hear it click occasionally. The magnetic thermal switch is
>something that does go out, and it's important to check the one you get to
>see if it's OK. A quicker test that should work OK too: turn it on with
no
>tip, while holding the end of the barrel near where the tip goes in. It

>should not get hot. Insert a tip, and it should get noticably hot within
>3 or 4 seconds. And inspect the cords, both power and the one to the
iron.
>They should be at least sound, if not clean. Another likely problem is a
>break (usually intermittent and hard to find) in the cord to the
handpiece,
>and you pretty much have to take your chances with that. If you can get
>them cheap enough, get two, one for spare parts ;-)
>
>If you get one of these, NEVER tighten the sleeve with pliers; it need
only
>be finger tight. NEVER grab the sleeve in the middle with pliers: you
>will pinch it down and it's very likely to start binding against the inner
>barrel. You can get a very wide variety of tips for the Wellers (Newark
>lists 18 shapes in three temperatures each--600F, 700F and 800F), and with
>the right tip, the iron is fine for just about any normal ham soldering
>smaller than what you'd use a torch on. You can even solder fine-pitch
>surface mount ICs with them, if you are very steady and patient and know
>the right tricks.
>
>73, K7ITM
>

3917. 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 16:03:30 UTC
From: jwl@cray.com
Message-ID: <1994Dec22.100330.25672@walter.cray.com>
Source record: 115050

Well, I'm about to put the 32s-1 back on the air, but I thought I would replace the tubes in the power supply. The 5R4 still works, but it (the glass) has broken loose from the base, so I thought about replacing them with 1n4007s, but I remember discussions a long time ago about doing that and they indicated that the voltage drop across a tube was a lot more than across a diode or two and that it was necessary to add a resistor to the circuit. I don't remember how big. Does anyone remember what that would be?

Thanks,
Jim.

Happy holidays!

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3918. Re: Rechargeable vs. disposable battries?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 16:03:50 UTC
From: c21rag@kocrsv01.delcoelect.com
Message-ID: <3dc816$nk1@kocrsv08.delcoelect.com>
Source record: 115051

In article <3d9d8q$mva@uudell.us.dell.com>, msd@doc.us.dell.com (msd@doc.us.dell.com) writes:
>
> Hi there,
>
> Pardon me if this is not the group to post this question to.
> I wanted to findout if rechargeable battries are cheaper/economical
> then using regular battries. Any comments or experiences are welcome.
> I always thought that as much power it takes for battries to recharge, it
> works out about the same when you buy disposable ones.
>
> Thanks in Advance.
> -msd

Let's do a real approximate calculation using a 4 AH nicad D-cell. 4 amps for an hour at a nominal 1.2 volts is 4.8 watt-hours that we take out. To recharge we must put around 40% more in than we took out, or about 7 WH. If our charger is 10% efficient, it will take 10 x 7 or 70 WH of power. At 10 cents per Killowatt-hour, that will cost about .7 cents. Remember I said this was going to be an approximate calculation.

Sears has occasional half-price sales on Die-Hard (TM) alkalines, but they don't get quite that cheap, even though it takes a 2 or 3 cycles for a nicad to deliver the energy in an alkaline. Charging energy is not the main cost of rechargeable batteries. For most purposes rechargeables are much more economical than disposables, but there are several factors to consider. Perhaps someone else would like to address those.

Roger Grady K9OPO c21rag@kocrsv01.delcoelect.com
Delco Electronics Corp. Kokomo, IN
"All information and opinions are personal unless otherwise stated."

3919. 15 Watt trans.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 16:51:55 UTC
From: pollack ziv <pollack@black.bgu.ac.il>
Message-ID: <3dcarb$3hq@bgumail.bgu.ac.il>
Source record: 115053

Hi,
I am looking for a simple diagram from a 15 watt morse trans. to
the 40 meter band.

Plese dont send me to the qrp mailing list and so.

73 & Tnks.

+---+
Ziv Pollak	" There must be a
Ben Gurion University, Israel	better way to start
E-mail: pollack@black.bgu.ac.il	the day than to wake
Ham Radio Call sign: 4Z9ACH	up in the morning. "
+---+
| Check out my new home page at: |
| http://www.cs.bgu.ac.il/~pollack |
+---+

3920. Re: Rechargeable vs. disposable battries?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 19:07:53 UTC
From: jwl@cray.com
Message-ID: <1994Dec22.130753.27765@walter.cray.com>
Source record: 115055

msd@doc.us.dell.com (msd@doc.us.dell.com) wrote:

: Hi there,

: Pardon me if this is not the group to post this question to.
: I wanted to findout if rechargeable battries are cheaper/economical
: then using regular battries. Any comments or experiences are welcome.
: I always thought that as much power it takes for battries to recharge, it
: works out about the same when you buy disposable ones.

: Thanks in Advance.
: -msd

In my opinion, rechargable batteries are very much cheaper than regular
battries in most cases.

My test case:
I have a BP-4 for my IC-2AT. At Dayton one year, I decided to see how
long alkaline bat's would last, compared to nicads in the same battery
pack. The BP-4 is a battery pack that holds 6 AA size batteries.

The AA alkalines lasted about 1.5 days. The nicads usually lasted about
a day or slightly more. The nicads are about 3 times more expensive
on the average, but can be recharged hundreds of times. The charger
probably is rated at 20 watts or so. I suspect it only costs less than
a dime to recharge the batteries that will replace dry cells that cost
$2-$3.

You can do the math. I'm convinced that nicads are cheaper in the long
run.

73,
Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3921. Re: PC Interference

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 19:44:29 UTC
From: jfw@proteon.com
Message-ID: <D189I6.DnL@proteon.com>
Source record: 115056

jeffery@uspto.gov (John Jeffery) writes:
>I have a Yaesu FT-990 located near my PC in my ham shack and am getting some
>interference from the PC in the radio. I discovered that the monitor is
>contributing some interference by turning off the monitor.
>I've tried putting ferrite filters on the monitor, data, and power cables
>for the PC but to no avail. I even tried shielding the PC but that didn't
>help either!

You may be able to reduce the interference by shielding the monitor; you can get spray-on RFI shielding paint from GC chemicals and other places, which may or may not attack the plastic of the monitor's box :-). Spray it inside, and make sure you have electrical continuity between that surface and the ground of the electronics inside.

The problem is that this isn't perfect; there's still that big hole in the front of the monitor case, and lots of smaller gaps for cables and such in the back. If the electronics inside wasn't designed to be quiet, there may not be any way to really fix it.

3922. Re: IC mixers vs. SRA-1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 21:05:07 UTC
From: robboma@aol.com
Message-ID: <3dcpm3$1al@newsbf02.news.aol.com>
Source record: 115057

>>.... and it has a SSB noise figure of 20 dB.
>>You could insert a 12 dB pad at the rf port of a SRA-1 and
>>still achieve at least the same noise figure. The pad would
>>improve the SRA-1's intercept point by another 12 dB.

My Rev. A data sheet list the SSB noise figure as only 12dB. Did I miss
something or did they improve the spec.?

Bob Masucci, WB3DBL

3923. Re: 15 Watt trans.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 22:25:27 UTC
From: zlau@arrl.org
Message-ID: <1994Dec22.222527.30480@arrl.org>
Source record: 114970

One of the better designs appeared in the December 1986
QST. You can use the inexpensive Radio Shack IRF 511
as the final with a slight loss in efficiency. It also
appears in the book QRP Classics, a collection of QRP
projects.

4Z9ACH pollack ziv (pollack@black.bgu.ac.il) wrote:
: Hi,
: I am looking for a simple diagram from a 15 watt morse trans. to
: the 40 meter band.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3924. TMS53C20???

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-22 22:46:13 UTC
From: btenison@aol.com
Message-ID: <3dcvjl$1tq@newsbf02.news.aol.com>
Source record: 115059

Hi there. I am looking for one of these speech synth chips... I believe
it is a TI chip (TMS53C20). We're interested in homebrewing a repeater
controller and want the digital voice capabilities of the commercial brand
RC's. Does anyone have any info on where we might be able to pick up
one of these chips (or anything equivalent, for that matter!)?
Thanks,
Bruce
KE4NJB

Bruce Tenison
Internet: btenison@aol.com
AX.25: KE4NJB@W4IAX.#MOBAL.AL.USA.NA

3925. Re: 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 00:17:48 UTC
From: wb4ijn@awod.com
Message-ID: <3dd4vc$i93@sumter.awod.com>
Source record: 114968

My suggestion is to not solid-state the power supply. All of my
516F-2's are tubed. My Collins "expert" friends tell me that the
higher voltages are very detrimental to some of the tubes in the
KWM-2's and 32S-x's. You can still get 5R4's and 5U4's pretty cheap.
Buy a half-dozen of each and they'll outlast you. email me if you need
sources of tubes.

73, Steve

3926. 900 MHz Cordless phone FAQ ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 05:04:01 UTC
From: gannonr@wariat.org
Message-ID: <3ddlo1$kn5@wariat.wariat.org>
Source record: 115061

Where might I find a FAQ on these little wonders ? I'm thinking about buying a 900Mhz cordless phone in the near future and there really seems to be a lot of brands available. Any information comparing these units would be much apreciated.

3927. Where can I get EMI filters for my PC ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 05:17:22 UTC
From: gkennedy@helix.net
Message-ID: <Cfb-kClgnY$T073yn@helix.net>
Source record: 115063
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Hi Folks !!

I'm trying to get rid of RF emissions from my PC, and need to find a source of plug-on EMI filters (9 pin and 25 pin) for the serial and parallel ports....does anyone know WHERE in Canada or the U.S. I can buy these goodies ??

I checked with one source here in Vancouver....but the pricing was absolutely ridiculous - $25 to $40 U.S. ** EACH ** (!!!!) with a 10 piece minimum order....surely these things are available in small quantities at a more reasonable price.....

Oh, yes, I am interested in supressing radiations near the 2M ham band......

Thanks in advance for any ideas !!

****
* Geoff L. Kennedy ** Located on the WE[s]T Coast of *
* "Kennedy's Space Centre" 8-) ** Beautiful British Columbia ! *
* E-mail: gkennedy@helix.net ** Coquitlam, BC, Canada *
****

3928. Homebrew printed circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 05:29:26 UTC
From: blizzard@io.org
Message-ID: <blizzard-2312940133370001@blizzard.net3.io.org>
Source record: 115064

Now that the long cold winter has set in, my thoughts turn to homebrew
equipment. I'm attempting to build the RF noise bridge described
in the ARRL antenna book but that means I need to make a printed circuit. Oops
never done that before.

Any help and/or advice would be appreciated. I tried the Radio Shack
pen resist and ferric chloride approach only to discover that the
pen resist doesn't prevent the traces from being dissolved.

If you have any practical advice, please email here or direct to
blizzard@io.org

Thanks de Dave VE3SVL

3929. Triad F-91X transformer

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 06:25:19 UTC
From: daf19730@Jane.UH.EDU
Message-ID: <3ddqgf$cs3@masala.cc.uh.edu>
Source record: 114971

Can anybody tell me what the ratings/voltages of the Triad F-91X
transformer are and which wires do what?

tnx de kb5pgy

3930. Index labs QRP rig proble

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 11:17:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.626.546@acenet.com>
Source record: 114973

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

Brunelli_pc@delphi.com writes:

BR>I heard that there was a problem with the index labs rig
BR>and that it was a fairly important flaw for qrp operations.

BR>any info on this would be appreciated. reply here or to

What problem was that Pete? I saw one in operation at a hamfest
and it sounded GREAT! 73 de AF4K

• SLMR 2.1a • Chutzpah: Does your BBS take collect calls?

3931. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 11:34:10 UTC
From: moisan@bronze.lcs.mit.edu
Message-ID: <3decji$dig@bronze.lcs.mit.edu>
Source record: 114972
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Dec22.013728.8538@ultb.isc.rit.edu>,
J.D. Cronin <jdc3538@ultb.isc.rit.edu> wrote:

>How does a "better" op-amp improve the Hamcomm circuit's performance?
>I built the 741 op-amp version and it works well.

I haven't yet tried the TL071 (or the LF356, another subsitute). As I
understand it, either chip uses less power and is faster (better slew rate)
than the 741. This might make HamComm more sensitive and better able
to decode modes such as AMTOR. I've only a 286/12 so I might not notice
the difference.

Perhaps Django has a better answer.

Dave
--
| David Moisan, N1KGH /^_/^\ moisan@bronze.lcs.mit.edu |
| 86 Essex St. Apt #204 (o ^ o) n1kgh@amsat.org |
| Salem. MA 01970-5225 | | ce393@cleveland.freenet.edu |
| |

3932. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 12:16:29 UTC
From: schro@norton.sni.de
Message-ID: <3def2t$oo4@nanette.pdb.sni.de>
Source record: 115065
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In <bcieslak.39.00088DF3@mkelan5.remnet.ab.com> bcieslak@mkelan5.remnet.ab.com (Brian C.) writes:

>>>I picked up a copy of Hamcom30 and am going to build the circuit
>>>for decoding. I have come up with a couple of questions:
>>> 1. The 100K Ohm resistors, what wattage should i use?

>>Whatever you have. The smallest will do.

>>> 2. I could not find a TL701 op amp but found a TL702, can I use
>>> it instead (i think it is just a dual Tl701 in 1 chip,
>>> please set me on the stright and narrow if i am out in
>>> left field).

>>I don't know what a TL701 is but i think the type is wrong.
>>You need a TL071. See the difference ? :-)

>I used just a plain old radio shack 1458 and it worked fine.....minor wiring
>changed due to pinout difference required.

HamComm 3.0 is more tolerant than previous versions to slow rise times
at the opamp output so any old chip should work. This may not be true
for other programs. A TL071 switches significantly faster.

The HamComm interface is just an amplifier with a very high gain for
squaring the input signal and at the same time boost it to voltage
levels to reliably drive an RS232 input. The same could be done with
other chips. Once if have build an interface using an LM339.

If your radio delivers a signal of several volts at its speaker output
it may even work with no interface at all.

>Problems I ran into are results of my 286-12Mhz machine not being fast enough
>73,
>Brian - AE9K

No neccessarily. I also have an old 286/12Mhz and will demonstrate RTTY
and AMTOR any time.

73 de Django
DL5YEC
(HamComm expert:-)

3933. R2/T2 Replacement ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 15:13:33 UTC
From: jcain1220@aol.com
Message-ID: <3depet$6qn@newsbf02.news.aol.com>
Source record: 115066

I let the boards sit on the shelf too long.

I have a set of the R2/T2 direct conversion receiver and phasing exciter boards by Rick Campbell that have been on the shelf for 18 months or so. In the meantime several of the ICs are apparently no longer manufactured. I am seeking information on direct substitutions. Can anyone help?

The missing ICs are: LM 387, NE 5514 and NE 5532.

Without your assistance, I'll never get on the birds with mode S.

N4SUP Jonathan
JCAIN1220@aol.com

3934. Re: What do you use for test equipment?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 17:36:49 UTC
From: gc@universe.digex.net
Message-ID: <3df1rh$s35@universe.digex.net>
Source record: 114974

In article <3daksm$9o4@newsbf02.news.aol.com>,
PaulBreed <paulbreed@aol.com> wrote:

[...]
>I would like to do some homebrew HF stuff and I was wondering what the
>experienced homebrewers use for test equipment????
>
>Any good leads on used Test Equipment?
>
>Beyond the basic EE tools like DVM, Soldering Iron, O-Scope what is
>needed?
>

Like one of the other responders to this article, I, too, do more
repair/modification/fix-up of commercially built radios than
homebrewing myself, but I think that for the most part the same
test equipment will be needed. So here is my $0.02 worth.

What test instruments to get:

Analog meter. If you are going to be working with anything that
needs to be "tuned up", get an analog meter. Simpson 260's are
nice and are available used. If you are working with high impedance
circuits look for a FET input or VTVM. Digital meters are good for individual
precision measurements but when your are adjusting a circuit they are
no good for following trends. Even my Fluke 75 with the LCD segment
indicator isn't very good. An oscilloscope could do the job if you
don't have a meter.

Oscilloscope. You have one of these, you're off to a good start.
60MHz 'scopes are fairly easy to come up with these days. You
need some good probes with it.

Bench power supply. I have one that has adjustable voltage 0-40v and
current limit 0-750ma. One or two of these and a couple of fixed voltage
ones are very handy to have around. How could you do any homebrew
work without at least one?

RF signal generator. If you are working on receivers it is hard to
do much without one. You want one that is reasonably stable and
has calibrated adjustable output level.

General coverage receiver. Maybe you are thinking that you want
to design and build your own receiver. But a simple general coverage
receiver can be a useful test instrument for either receiver or
transmitter work. Try to get one that will cover your IF (e.g.
455kHz if that is what you are using.) Useful for frequency measurements, too.

Frequency counter. These are nice to have, but they go near the
bottom of the list. If you have gotten this far on the list you
already have an oscilloscope, a signal generator and the receiver
(which can be calibrated against WWV) to measure frequency.

Other posters have mentioned dip meters, RLC meters (or bridges), etc.
I agree with most of the other comments.

Small stuff:

Clip leads. You need a lot of clip leads.
Step attenuators
Dummy loads
Coax jumpers

What is "must" vs. nice:

The meter, oscilloscope and power supply go in the "must" category.
Beyond that it depends on what you want to do and how much you
want to spend. A signal generator is high on the list for receiver work.

>
>What is the cheapest way to perform the spectrum analyzer function???

I'd like to know this, too. The oscilloscope and the general coverage
receiver can do some crude spectrum analysis, but if you want
a real spectrum analyzer it is going to be expensive.

A nice HP unit can be had for under $2000. Well, maybe you hadn't planned
on spending that much. :-) I am watching for plug-in type spectrum
analyzers. There was a clean looking HF spectrum analyzer plug-in
for the Tek' 500 series 'scope for only $100 at a hamfest last year.
But then I'd have to get the 'scope (they're cheap, but big, heavy and
noisy).

Where to get used test equipment:

Good, inexpensive test equipment is readily available these days
(compared to 10 or 20 years ago). There is always a risk vs. price
trade off.

Here are some options:

Big national dealer (e.g. Tucker). Expensive but they
will guarantee their equipment. High price, low risk.

Small hamfest dealer. Quite a range here. There are some who check
out their equipment, only sell good stuff, and guarantee it.
Others buy the equipment, might plug it in to see if it works,
and sell it as-is.

Individual sales, hamfest, HTYS or net.forsale groups. Risky but generally
good deals.

I like going to hamfests and picking up the cheap deals but have
bought some things from the big dealers. I have ended up with

a lot of quite useful test equipment with only a few bad deals along the way.

Miscellaneous hints:

When buying a used VOM, check all ohms scales and look inside at the battery holder for corrosion.

When buying an oscilloscope, ask about probes. They can be purchased separately, but you will need to get them.

73,

Gary

3935. Digital Selective Calling

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 18:02:40 UTC
From: fanfant@netcom.com
Message-ID: <fanfantD19zGG.5D@netcom.com>
Source record: 115067

Am working on a homebrew project. Want to implement microprocessor based DSC but need an algorithm to obtain bit sync of serial data from a binary FSK modem.

Any help would be appreciated.

-rob Email: fanfant@netcom.com Phone: (206)402-2526

3936. Re: R2/T2 Replacement ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 18:23:02 UTC
From: galen@picea.CFNR.ColoState.EDU
Message-ID: <3df4i6$3fo3@yuma.ACNS.ColoState.EDU>
Source record: 114975

In article <3depet$6qn@newsbf02.news.aol.com> jcain1220@aol.com (J Cain1220) writes:
>I have a set of the R2/T2 direct conversion receiver and phasing exciter
>boards by Rick Campbell that have been on the shelf for 18 months or so.
>In the meantime several of the ICs are apparently no longer manufactured.
>I am seeking information on direct substitutions. Can anyone help?
>The missing ICs are: LM 387, NE 5514 and NE 5532.

The LM387 is listed in the Digi-Key catalog, the 55xx's should still be
available, Digi-Key might have them or substitutions.
I get the 55xx series from a local electronics shop.
Digi-Key, 1-800-344-4539

galen, KF0YJ

3937. I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 19:18:03 UTC
From: matt.edmondson@fatal.com
Message-ID: <9412231733291129@fatal.com>
Source record: 114977

I'm getting ready to take my novice & Tech test but I don't have the Ca$h to buy a nice rig,how hard is it to build your own rig? Is voice a lot harder to build then code? ANY tip's /suggestions would be GREATLY appreciated.

Matt Edmondson
matt.edmondson@fatal.com

3938. Re: Amplifier Tank Circui

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 20:33:00 UTC
From: lee.buller@otherbbs.com
Message-ID: <941224010506536@otherbbs.com>
Source record: 114983

-=> Quoting Paul H. Bock to All <=-

PHB> Newsgroups: rec.radio.amateur.homebrew
PHB> Path:
PHB> news.clark.net!news.sprintlink.net!howland.reston.ans.net!gatech!bloom-
PHB> be From: phb@syseng1.melpar.esys.com (Paul H. Bock)
PHB> Subject: Re: Amplifier Tank Circuits
PHB> References: <941221084704286@posnet.co.uk>
PHB> <3d9med$dhk@goudron.gel.ulaval.ca> Sender: news@melpar.esys.com (Melpar
PHB> News Administrator) Organization: E-Systems, Melpar Division
PHB> Date: Wed, 21 Dec 1994 18:18:31 GMT
PHB> Message-ID: <phb.788033911@melpar>
PHB> Lines: 29

PHB> leblancm@gel.ulaval.ca (Mario Leblanc) writes:

>A short comment on the use of VHF tubes (valves?) in HF amplifiers: since th

>devices have gain at VHF frequencies, you must be aware of the possibility of

>oscillations at VHF or higher. There was a good paper on that topic in QST a

>years ago but I don't have the reference on hand.

PHB> Even the venerable 6146B, usable up to 2 meters, can exhibit
PHB> problems with parasitics whether operated on HF, 6 or 2. The older
PHB> ARRL Handbooks discuss tube parasitics in some detail, as do the now
PHB> out-of-print V.H.F. Manual editions (Tilton) and the RSGB VHF Manual.
PHB> If you're doing your own amplifier design, spend some time evaluating
PHB> this phenomenon *before* you build it. If you're copying someone
PHB> else's design, be wary of making alterations which might affect stray
PHB> circuit capacitance (such as substi- tuting a different tube socket,
PHB> etc.).
PHB> __/ __/ __/ __/__/ __/__/ __/__/__/ __/__/__/__/
PHB> __/ __/ __/ __/ __/ __/ __/ __/ __/ __/
PHB> __/__/ __/__/__/__/ __/ __/ __/ __/ __/ __/__/
PHB> __/ __/ __/ __/ __/ __/ __/ __/
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PHB> (|_|) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
PHB> | |) Principal Systems Engineer Telephone: (703) 560-5000 x2062

Just to add to the noise on the Internet..... It is great to see that
someone is building QRO on any Frequency. 8877 tubes are good where ever
they are employed... great piece of engineering. I still have an 829-B
ready to go on SSB or CW on tww meters. What a cheap way to get 90 watts,
rather than spend $350 on a solid state amp. Yes, I am cheap, but that

is what the fun is all about. Try putting a 3-500Z on 6 meters...or... even two of them. Building amps are great fun....but remembers...HIGH VOLTAGE CAN KILL. Be carefull..... I was and lived to tell the stories, thanks to ground fault breakers and a quick acting friend as I worked on amp. Long live glass envelopes...the bigger the better......

Lee K0WA lee.buller.otherbbs.com

... "Scotty, beam me up another Blue Wave message."
___ Blue Wave/QWK v2.12

3939. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 21:09:46 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D1A84B.JtH@indep1.chi.il.us>
Source record: 114978
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

Okay, I can't stand it any more. What the heck is a Hamcom30?

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3940. test

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 21:36:01 UTC
From: test@amexco.com
Message-ID: <3dffs1$78g@dawn.mmm.com>
Source record: 114991

wwwwwwwwww

3941. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-23 22:28:45 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec23.222845.16996@ke4zv.atl.ga.us>
Source record: 114976
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Dec22.013728.8538@ultb.isc.rit.edu> jdc3538@ultb.isc.rit.edu (J.D. Cronin) writes:
>
>How does a "better" op-amp improve the Hamcomm circuit's performance?
>I built the 741 op-amp version and it works well.

A better op-amp will have a better noise figure and a better slew rate. The latter is what's more important. The op-amp is a sinewave to square-wave converter in this application. You want an op-amp with a high enough slew rate to convert a zero crossing into a very rapid rail to rail transition in the output signal. That requires a pretty high slew rate even at modest data rates.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3942. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 01:07:12 UTC
From: copeland@fohnix.metronet.com
Message-ID: <3dfs80$982@fohnix.metronet.com>
Source record: 114981
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <3d6psg$4av@acme.freenet.columbus.oh.us>,
Joseph Testa <jtesta@freenet.columbus.oh.us> wrote:
>
>I picked up a copy of Hamcom30 and am going to build the circuit
>for decoding. I have come up with a couple of questions:
> 1. The 100K Ohm resistors, what wattage should i use?

1/4 watt, just cause they are common, 1/8 would do

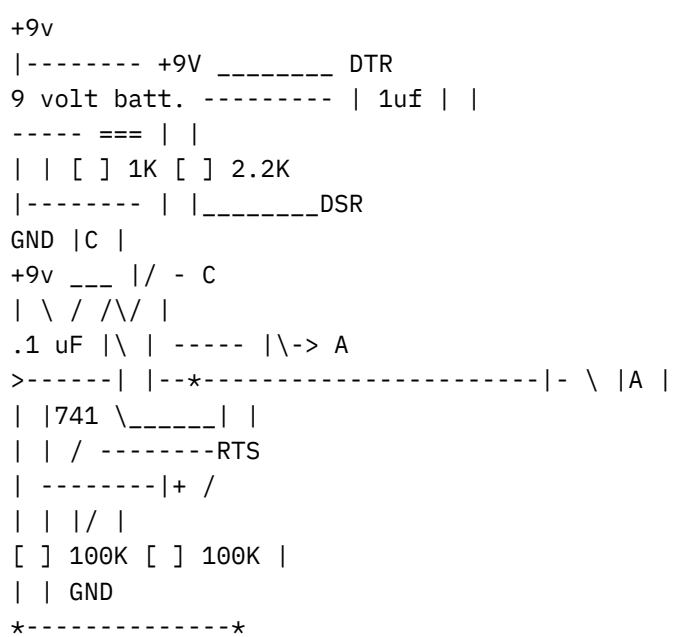
Here are two opto circuit I've been playing with for HAMCOM/JVFAX.
They virtually eliminate all computer induced rfi. I've been using
a five foot serial cable and twenty foot audio cable with this
circuit and the results are truly remarkable with JVFAX.

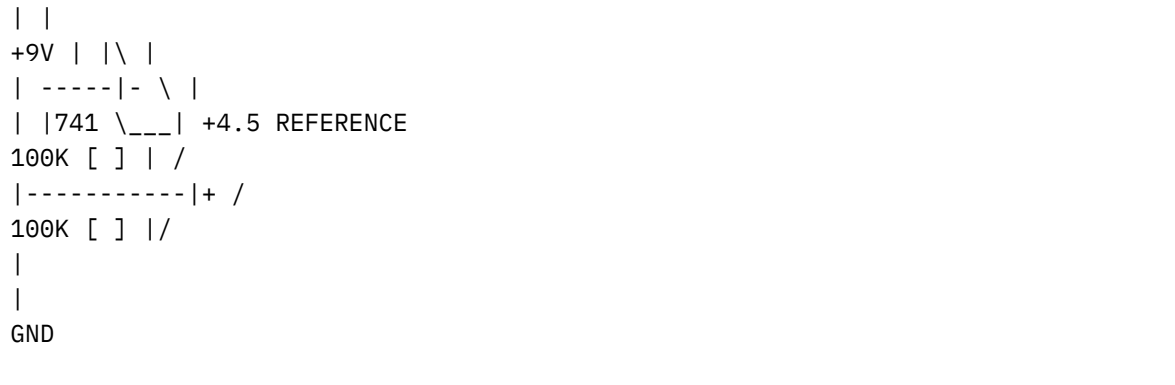
I've used the first circuit successfully, but recommend using the second.
The first can be built with common Radio Shack parts. The second requires
a little more uncommon LM358 and TIL181.

The first circiut may introduced problems since the +9v is not regulated
and induces error into the reference op amp output ... even though it seems
to work well.

Perhaps some engineers out there may have some advice to improve these
even more.

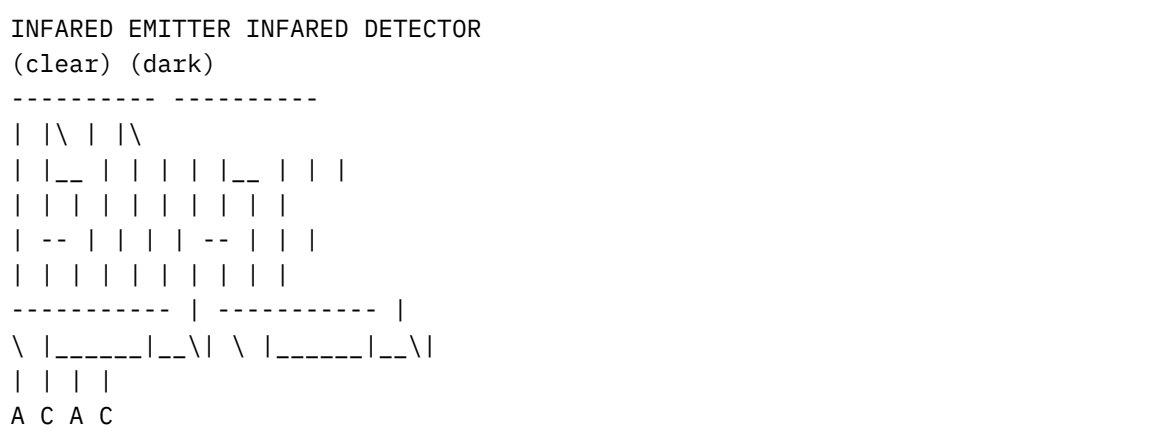
==========





```
| |
+9V | |\ |
| -----|- \ |
| |741 \___| +4.5 REFERENCE
100K [ ] | /
|-----------|+ /
100K [ ] |/
|
|
GND
```

==========



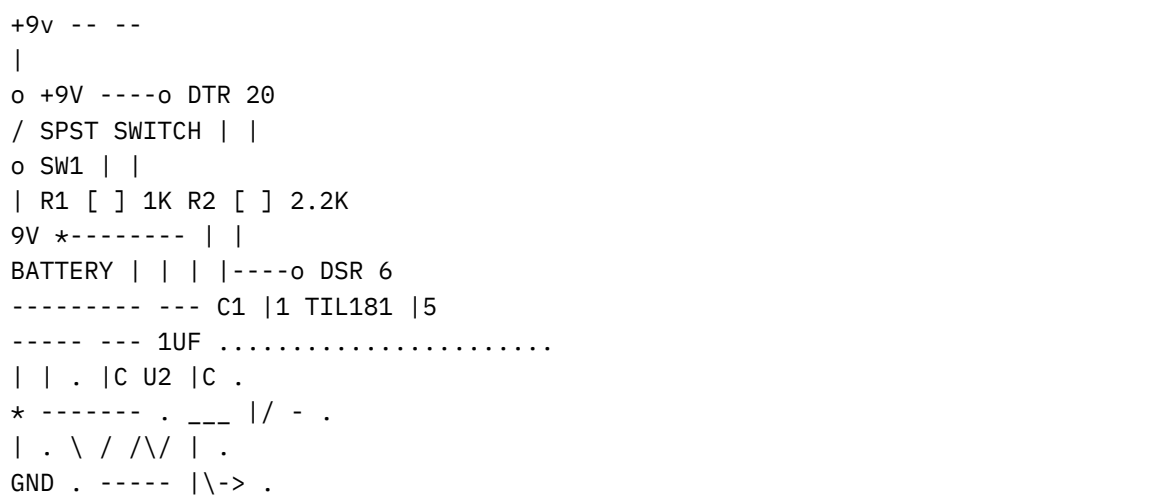
```
INFARED EMITTER INFARED DETECTOR
(clear) (dark)
---------- ----------
| |\ | |\
| |__ | | | | |__ | | |
| | | | | | | | | |
| -- | | | | -- | | |
| | | | | | | | | |
----------- | ----------- |
\ |______|__\| \ |______|__\|
| | | |
A C A C
```

These are available at Radio Shack as a pair for $1.99 (#276-142).
This shows which is the Anode and which is the Cathode, not clear on
the package.

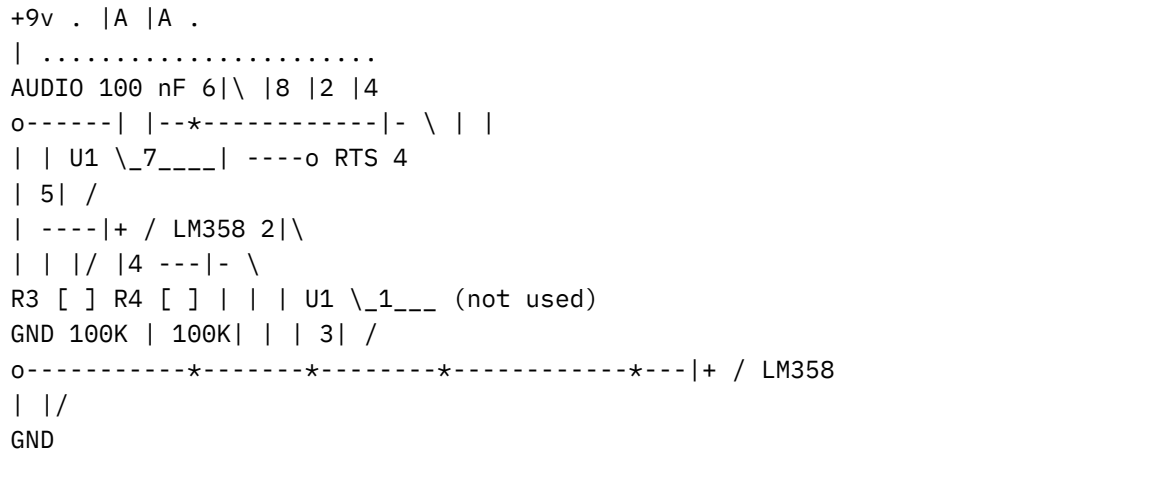
The LED and DETECTOR must be positioned right up against each other and
exactly aligned to get maximum light transfer. The sides with the little
lense like dots must be placed together.

==========

I'd recommend this second circuit for more stability and possibly accuracy.



```
RS232 connector size ----> 25 9
+9v -- --
|
o +9V ----o DTR 20
/ SPST SWITCH | |
o SW1 | |
| R1 [ ] 1K R2 [ ] 2.2K
9V *-------- | |
BATTERY | | | |----o DSR 6
--------- --- C1 |1 TIL181 |5
----- --- 1UF .....................
| | . |C U2 |C .
* ------- . ___ |/ - .
| . \ / /\/ | .
GND . ----- |\-> .
```




```
================================================================================
| ** NOTE** |
| After constructing, measure LM358 pin 7 with no audio on the input. |
| It should be high (~8v), if it is low (~0v) it will drain the battery |
| in only 20 hours or less. |
| |
| To correct this: Disconnect R1 from +9v and reconnect to U1 pin 7. |
| Disconnect U1 pin 2 and reconnect to GND. |
| |
================================================================================
```

The LM358 is a single supply opamp and can be substituted with the LM2904, LM158, or LM258. (The dual supply 741 can not be used as a substitute.)

The opto isolator IC can be substitued for many other types. The 4N35 has been tested successfully. The discrete infared emitter/detector from Radio Shack has been tested successfully.

I tried to use a darlington opto (TIL113), but couldn't get it to work. A darlington opto circuit would only require 1.5ma average. That would make battery life about 133 hours. Maybe I'll try again later.

```
================================================================================
```

MORE NOTES:

The 9v battery could be substitued with a 9 or 12 vdc adapter. However I've found the clearest pictures occur when both the radio and HAMCOM are running off batteries ... at 6am 8).

A 9v battery should last about 50 hours while audio is present (assuming 200ma hours for a battery). If no audio is present the battery will last 400 hours.

The battery life could be a problem for people who leave HAMCOM running all night using the timed FAX option. Battery would only last a week.

If you have any advice or knowledge that could improve this, please let me know.

```
-------------------------------------------------------------------------
| copeland@metronet.com |
-------------------------------------------------------------------------

--
-------------------------------------------------------------------------
| There are two types of people in this world, those who separate |
| people into groups,and those who don't. copeland@metronet.com|
-------------------------------------------------------------------------
```

3943. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 04:42:08 UTC
From: dalex@eskimo.com
Message-ID: <D1At2F.LyA@eskimo.com>
Source record: 114979
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

<1994Dec22.013728.8538@ultb.isc.rit.edu> <3decji$dig@bronze.lcs.mit.edu>
<D1A84B.JtH@indep1.chi.il.us>
Keywords: Hamcom30 schematic

and where can it be found?

3944. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 05:05:08 UTC
From: copeland@fohnix.metronet.com
Message-ID: <3dga64$5o5@fohnix.metronet.com>
Source record: 114980
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.shortwave

In article <D1A84B.JtH@indep1.chi.il.us>,
Clifton T. Sharp <clifto@indep1.chi.il.us> wrote:
>Okay, I can't stand it any more. What the heck is a Hamcom30?

HAMCOM is a shareware program that allows one with a shortwave
radio with SSB to decode CW,RTTY,SITOR,AMTOR and a few other formats.
It comes with simple schematics for the HAMCOM interface. There is
only 4-5 parts and takes 30 minutes to put together with local
radio shack parts (~$5). It hooks to your computers serial port and to the
SW radios ear jack. It doesn't use TX/RX on the serial line, but DSR
which creates hi-speed interrupts to your pc.

The HAMCOM interface also works with JVFAX which allows you to decode
SLOW SCAN TV color pictures and hi-resolution weather faxes.
The weather faxes are relayed on SW by the Navy from Satelites.

Well worth checking out!

--

| There are two types of people in this world, those who separate |
| people into groups,and those who don't. copeland@metronet.com|

3945. Re: R2/T2 Replacement ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 05:58:08 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D1AwKw.LyG@indep1.chi.il.us>
Source record: 114982

In article <3depet$6qn@newsbf02.news.aol.com> jcain1220@aol.com (J Cain1220) writes:
>The missing ICs are: LM 387, NE 5514 and NE 5532.

Try ECG 824 for the LM387 and ECG 778A for the NE5532. Can't help with
the NE5514. (ECG should be available at a TV parts distributor near you.)

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3946. Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 09:57:00 UTC
From: jann.larsson@swedx.ct.se
Message-ID: <ftn_2.201.339_b30acdd7_Jann.Larsson@ct.se>
Source record: 114985

> From: schro@norton.sni.de (W.F.Schroeder)

> HamComm 3.0 is more tolerant than previous versions to slow rise
> times at the opamp output so any old chip should work.
> This may not be true for other programs. A TL071 switches
> significantly faster.

Does this improve the performance of the circuit significantly or is the
difference neglectable?

Electronic greetings, Jann

Merry X-mas!

3947. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 10:05:51 UTC
From: spbachhu@mtu.edu
Message-ID: <3dgrpv$b3e@maxwell1.ee>
Source record: 114984

Joseph Testa (jtesta@freenet.columbus.oh.us) wrote:
:
: I have a TV that decided to go to the grave. The picture has 1 horizontal
: line through the middle and since it is > 10 years old (13 inch), i decided
: to buy a new one. Is there anything I can do with the parts? (as a amateur
: radio operator, i just can't bring myself to throw it away). If nothing
: else i guess i can practice de-soldering. I know there is some real
: DANGEROUS voltage in there, so any hints on how to NOT electrocute
: myself would be appreciated also.
:
: joe

I read in some old (50's or 60's) science project book that you could make
an x-ray machine out of a broken tv set. I guess you apply some excess
amount of voltage to the picture tube and waallah! x-rays flyin' out all
over the place. As an amateur radio operator, maby you could use it to
transmit way up there in the 10 picometer band. In any event, I'd wear
a lead suit. Have fun!

Stephen Bachhuber
spbachhu@mtu.edu

3948. Re: 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 15:12:36 UTC
From: jlockwd@ix.netcom.com
Message-ID: <3dhdp4$mja@ixnews2.ix.netcom.com>
Source record: 114986

In <3dd4vc$i93@sumter.awod.com> wb4ijn@awod.com (Steve Thomason) writes:

>
>
>My suggestion is to not solid-state the power supply. All of my
>516F-2's are tubed. My Collins "expert" friends tell me that the
>higher voltages are very detrimental to some of the tubes in the
>KWM-2's and 32S-x's. You can still get 5R4's and 5U4's pretty cheap.
>Buy a half-dozen of each and they'll outlast you. email me if you need
>sources of tubes.
>
>73, Steve
>
>

Another reason to *not* solid state a power supply is that the instant on of the HV can shorten the life of the tubes in the radio. By dumb luck, the turn on delay of tube type rectifers is better for the other firebottles in the rig.

73,

Jim Lockwood - km6nk

3949. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 18:05:04 UTC
From: gc@universe.digex.net
Message-ID: <3dhnsg$93d@universe.digex.net>
Source record: 114987

In article <9412231733291129@fatal.com>,
Matt Edmondson <matt.edmondson@fatal.com> wrote:
>I'm getting ready to take my novice & Tech test but I don't have the
>Ca$h to buy a nice rig,how hard is it to build your own rig? Is voice
>a lot harder to build then code? ANY tip's /suggestions would be GREATLY
>appreciated.
>

Matt,

Homebrewing your own equipment is one of the most fun parts of
amateur radio, but it is not the best way to get started cheap.
If your main goal is to get on the air cheaply, here are my
recommendations:

Used equipment: You do take some risk buying a used radio, but
there are a lot of good ones available. This is probably the
best way for a beginner to get started cheap. You can get something
on the air and working with minimal time and effort. Then you can go
on to more interesting things like building your own.

Kits: I have seen several kits for QRP rigs, both commercial and
club projects. Most are CW only. I haven't tried them myself
but the reports I hear on the net sound good. Get on the QRP list
to ask about these.

Code (CW) is the easiest mode to implement, which is one reason
the QRP rigs use it.

The difficulty of building your own radio varies widely. If you
buy a complete kit, you will at least have to know how to
identify parts and solder them in. You will also have to
tune-up the radio.

73,

Gary

3950. ISA Card DTMF Decoder Needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 21:56:19 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <3di5e3$hts@nntp.Stanford.EDU>
Source record: 114988

I am looking for an ISA bus board which has DTMF encode/decode
capability with some buffering to use in a PC based repeater
control application.

I know there are a number of companies out there which offer
black box controller hardware but I have never seen anything
like a stand alone encode/decode board for the PC.

Any suggestions of possible vendors appreciated

Steve Muther WF6R stevem@w6yx.stanford.edu

3951. TV with no audio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 22:57:43 UTC
From: Rick Zabrodski <zabrodsk@med.ucalgary.ca>
Message-ID: <Pine.SUN.3.91.941224155243.20049A-100000@ume>
Source record: 114989

I have never got inside a tv before but since I have seen some discussion
on parts/repair I would like some free advice!
15 inch older, color tv recently lost audio. Picture is fine. Where
does one look first second or third. (The only tube is the picture tube)
I have a fluke mm, no scope. (Is this a good reason to use to conince my
wife that I NEED one? ;-)
thanks,

****
Dr. Rick Zabrodski BSc, MD, CCFP(E) * VE6GK
Email: zabrodsk@med.ucalgary.ca * NorCal 519 ARCI 7099 GQRP 8329
Phone 403-271-5123 Fax 403-225-1276 * "Power is no subsitute for skill"
****

3952. Re: Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-24 23:09:35 UTC
From: jconsole@panix.com
Message-ID: <3di9nf$oj8@news.panix.com>
Source record: 114990

> jann.larsson@swedx.ct.se (Jann Larsson) writes:
> > From: schro@norton.sni.de (W.F.Schroeder)
>
> > HamComm 3.0 is more tolerant than previous versions to slow rise
> > times at the opamp output so any old chip should work.
> > This may not be true for other programs. A TL071 switches
> > significantly faster.
>
> Does this improve the performance of the circuit significantly or is the
> difference neglectable?
>
> Electronic greetings, Jann
>
> Merry X-mas!
>
>
>
>>>>
I have built the interface descibed. i have an icom r7100 i have tuned to 144.50 mhz but i hear
nothing and the software says either no audio is applied or or no interface found.

measuring between pin 4 and 7 i am getting propper voltage +-15v and i did test
for continuity on the audio in. btw i have audo in going to tape recorder jack on back of icom.

any suggestions ? are there other freq above 144.50...

thanks merry xmas to all

3953. Re: TV with no audio

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-25 14:43:24 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec25.144324.24628@ke4zv.atl.ga.us>
Source record: 114993

In article <Pine.SUN.3.91.941224155243.20049A-100000@ume> Rick Zabrodski
<zabrodsk@med.ucalgary.ca> writes:
>I have never got inside a tv before but since I have seen some discussion
>on parts/repair I would like some free advice!
>15 inch older, color tv recently lost audio. Picture is fine. Where
>does one look first second or third. (The only tube is the picture tube)
>I have a fluke mm, no scope. (Is this a good reason to use to conince my
>wife that I NEED one? ;-)

Everyone "needs" a scope, but this problem shouldn't require one.
The best way to troubleshoot a no sound problem without a scope
is with a signal injector. A cheap and easy one can be made from
a battery and a RS piezo buzzer. Just use a 10 uf cap to couple
the audio to a probe. Start at the AF output stage and inject your
tone. You should hear it coming out the TV speaker. If not, then
the problem is in the output stage. Otherwise, back up a stage at
a time until you don't hear any audio. You've just located the
defective stage. Now you can use your DMM and some common sense
to isolate the faulty component. (Look at stage operating voltages
for a strong hint as to which component is bad, then start testing
those components.)

If you had a scope, you'd start from the other end, at the demodulator,
and follow the audio until you lost it. Then you'd troubleshoot the
individual stage to the component level as before.

A quicker technique with either instrument is the binary search.
Start in the middle of the audio chain and eliminate half the
circuitry. Then check in the middle of the remaining half and
so on. It's like the old game of 20 questions, you can narrow the
problem to a stage very quickly this way. However, the methodical
back to front or front to back approach works fine, and may be
less confusing if you aren't as familiar with the particular set.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3954. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-25 15:12:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec25.151204.24792@ke4zv.atl.ga.us>
Source record: 114992

In article <3dhnsg$93d@universe.digex.net> gc@universe.digex.net (Gary Chatters) writes:
>In article <9412231733291129@fatal.com>,
>Matt Edmondson <matt.edmondson@fatal.com> wrote:
>>I'm getting ready to take my novice & Tech test but I don't have the
>>Ca$h to buy a nice rig,how hard is it to build your own rig? Is voice
>>a lot harder to build then code? ANY tip's /suggestions would be GREATLY
>>appreciated.
>
>Homebrewing your own equipment is one of the most fun parts of
>amateur radio, but it is not the best way to get started cheap.
>If your main goal is to get on the air cheaply, here are my
>recommendations:
>
>Used equipment:
>Kits:

These are both good suggestions. For the potential builder, the
best piece of test equipment is a good receiver. You should probably
start out with a used commercial one, though some kits are foolproof
enough to make them a safe start.

>Code (CW) is the easiest mode to implement, which is one reason
>the QRP rigs use it.

This is only trivially true. At VHF, a FM rig will likely be simpler
than a CW rig. The receiver is easier, and the transmitter is only
a varactor and mike amplifier stage different from a CW transmitter.
There are one chip solutions for both FM transmitter and receiver
available at VHF. This can be rewarding because it's almost fool
proof, and you can brag to your buddies that you made your own
HT.

At HF, the receiver for SSB/RTTY/CW is essentially the same except
for possible differences in the IF filter bandwidth. The transmitter
for RTTY is again only marginally more complex than for CW, requiring
only a capacitor and a switching transistor added to the oscillator.
SSB voice transmitters are somewhat more ambitious, but a DSB transmitter
is trivial, and acceptable on 10 meters.

A CW transmitter isn't a bad project, however, and a 6L6 will give
you a respectable 15 watts without much work. A somewhat neater
rig would use a 6C10 in a MOPA configuration with the latter two
sections of the tube in push pull. That'll give about 5 watts out
in a circuit with good second harmonic suppression, and with little
problem with chirp.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3955. Homebrew printed circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-25 16:31:00 UTC
From: tom.hammond@woodybbs.com
Message-ID: <93.3967.7584.0NFB8614@woodybbs.com>
Source record: 115015

BL>Message-ID: <blizzard-2312940133370001@blizzard.net3.io.org>
>Newsgroup: rec.radio.amateur.homebrew

BL>Now that the long cold winter has set in, my thoughts turn to homebrew
>equipment. I'm attempting to build the RF noise bridge described
>in the ARRL antenna book but that means I need to make a printed circuit. Oo
>never done that before.

BL>Any help and/or advice would be appreciated. I tried the Radio Shack
>pen resist and ferric chloride approach only to discover that the
>pen resist doesn't prevent the traces from being dissolved.

In the JAN '95 issue of QST was a note indicating that the RED SHARPIE
permanent marker pens (by Sanford, I think) seem to do the BEST job of
sticking to copper. The red ink is also transparent, so you can see any
other lines you might have made on the PC board.

Other suggestions:

1) SCOUR the copper WELL, with abrasive cleanser AND steel wool.

2) WASH the copper WELL when done, and DRY it WELL, WITHOUT touching it
with your fingers. Use a paper towel or a really clean towel for
the drying.

3) When etching, assuming you use ferric chloride:

A) use fairly new etchant. Etchant which is already pretty
much used up takes much too long to do its job, thus tending
to cause the resist to lift from the copper.
B) AGITATE the board continuously. The agitation causes a mild
'washing' action which helps to keep the etched precipitate
washed away fro the uncovered copper.
C) WARM the etchant. Warm etchant works MUCH more quickly.
D) DON'T rub the board while etching, in case you might rub
off some of the resist

4) If you were in more of a "production" mode, I'd suggest photo
sensitized PC board, negatives, and home made spray etch tanks. but
it sounds as if you're not nearly at that level... yet.

Good luck.

73 - Tom Hammond N0SS
* LAKOTA v1.4
--- Alexi/Mail 2.02b (#83)
* Origin: Distant Winds BBS * Jefferson City, Mo * [314] 635-7868 (1:289/67)

3956. formula for 5/8 wave vert. needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 00:59:42 UTC
From: bhowle@freud.inst.com
Message-ID: <3dl4hu$7r1@freud.inst.com>
Source record: 114994

I've looked in the antenna book and in the handbook and for the life of me I can't find the formula for a 5/8 wave vertical antenna and radials - want to build one for a vhf frequency -

you help would be appreciated -

TNX/Bob/WA4ZID

3957. Crystal question

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 08:32:53 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D1Et2t.lux@indep1.chi.il.us>
Source record: 114995

What could make a crystal go really nuts? I got curious tonight. I found the only 4.433618 MHz crystal in Chicago in a junkbox the other day and set about constructing my TCM3105-based packet modem (from scratch, natch), had problems, pulled the 39 pf caps off and got a clock; when I had further problems, I noticed the clock was off by a factor of about 2.5 (i.e., the crystal was running at about 9.9 MHz). Verified this both by swapping chips and by dropping in a 4 MHz crystal, which looked a whole lot more like it (but of course not close enough).

What made it strange? Hanging a small starter cap off each lead made it oscillate intermittently, so I thought it was open and just a capacitor now, so I put in a few caps of varying size and the circuit wouldn't oscillate at all. Also, grounding the crystal case made it intermittent while ungrounding it (and of course removing the starter caps) made it oscillate again.

All I could think of after that is that it might have fractured, but that still wouldn't necessarily explain the weird behavior.

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3958. Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 11:01:00 UTC
From: jann.larsson@swedx.ct.se
Message-ID: <ftn_2.201.339_b40bac01_Jann.Larsson@ct.se>
Source record: 115000

> I have built the interface descibed. i have an icom r7100 i have
> tuned to 144.50 mhz but i hear
> nothing and the software says either no audio is applied or or no
> interface found.

I don't know what you find at 144.5 Mhz, I am not used to amateur-frequencys,
and especially not to VHF and up in other country's by natural reasons.

> any suggestions ? are there other freq above 144.50...

What are you looking for?

Happy New Year! / Jann

3959. Re: Rechargeable vs. disposable battries?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 13:52:30 UTC
From: bparks@nyx.cs.du.edu
Message-ID: <3dmhqu$br7@nyx.cs.du.edu>
Source record: 114996

Hello. Please allow me to share my thoughts on this subject.

I am fairly new to the ham community myself, and when I purchased my HTX202, the question of what type of battery to use came up. There are pros and cons to both alkaline (disposable) and ni-cads (rechargeable). So a simple, real life field test was in order.

Going to the store, I picked up a fresh pack of Energizer batteries. I also purchased a Mellenium battery charger and batteries. Now I was set. With a pad and a pen and my stopwatch on my wrist, I would get and idea of performance. I kept my tranmission times at a set amount (approx.) each day. And after 6 rounds of recharging and purchasing replacement alkalines, I now had some figures to play with. Here are my personal views and conclusions:

I noticed that the alkalines lasted longer than the ni-cads. They had a slower degradation curve than the ni-cad pack, which when started to drop, dropped pretty fast. Alkaline batteries put out 1.5v per cell where ni-cads compare at 1.2v per cell. The alkaline batteries allowed me to transmit a full 7 watts, the ni-cads allowed for 2 watts. Now let me say that it is easy to fall into the trap of "more is better!". But remember, that ni-cads can be recharged again and again. This was the selling point for me. After going through just 6 re-chargings I had paid for the charging station. A few more and the batteries will be paid for. And also, that most repeaters have good ears. You don't need the wattage as much as ypu need a decent antenna! I ordered a Tiger Tail from Antennas West (you can find the ad in QST magazine) and was delighted. I use it when I am in troublesome locations and have difficulty hitting the repeaters on low power, which is my prefered mode of operation. Anyway, the bottom line, I believe ni-cads are the way to go. Just keep an extra pack on hand (grin!), those alkalines are expensive when you have to purchase at least 6 at a time. That could be a lunch instead!

73's KB0PML

BRYAN PARKS
bparks@nyx.cs.du.edu

3960. Re: Homebrew printed circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 15:24:15 UTC
From: plato@metronet.com
Message-ID: <3dovf1$5pv@feenix.metronet.com>
Source record: 115006

blizzard@io.org (dave blizzard) wrote:
>Now that the long cold winter has set in, my thoughts turn to homebrew
>equipment. I'm attempting to build the RF noise bridge described
>in the ARRL antenna book but that means I need to make a printed circuit. Oops
>never done that before.
>
>Any help and/or advice would be appreciated. I tried the Radio Shack
>pen resist and ferric chloride approach only to discover that the
>pen resist doesn't prevent the traces from being dissolved.
>
>If you have any practical advice, please email here or direct to
>blizzard@io.org
>
>Thanks de Dave VE3SVL
I have successfully made many small PC boards using the toner transfer systems available through mail
order and in some electronics stores. For my use, I have used my laser printer to print designs from my
Tango package. You can also copy a board layout from a magazine with a standard copier. This is ironed on very carefully with a hot iron onto VERY clean copper. A water soak removes the paper backing and standard etching techniques begin here. There are several of these
special tranfer paper brands available. The real trick is in the iron-down. It takes a bit of practice, but I
even made two sided boards using this method.
happy boarding!

3961. Re: B&W miniductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 19:11:51 UTC
From: mjsilva@ix.netcom.com
Message-ID: <3dn4hn$oea@ixnews1.ix.netcom.com>
Source record: 114998

In <3d62b4$k8s@usenet.INS.CWRU.Edu> dl278@cleveland.Freenet.Edu (William J. Graham) writes:

>
>I recently decided to build an antenna tuner for an SW receiver.
>I soon discovered that I had no catalogs that seemed to carry
>B&W miniductors which are all I need to do it (being lazy and not
>wanting to try winding coils).
>
>Anyone have a possible source?
>
Ocean State Electronics has them in their catalog (with lots of other good stuff). They're in Westerly, RI, and their number as of 1992 is 1-800-866-6626 / 1-401-596-3080.

73,
Mike, KK6GM

3962. Re: I have a dead TV, can i use it?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 19:19:32 UTC
From: mjsilva@ix.netcom.com
Message-ID: <3dn504$oi7@ixnews1.ix.netcom.com>
Source record: 114999

In <3d6u64$g5c@mrnews.mro.dec.com> randolph@est.enet.dec.com (Tom Randolph) writes:

>
>
>Joseph Testa (jtesta@freenet.columbus.oh.us) wrote:
>>: I have a TV that decided to go to the grave.
>
>Yup, been there, done that. There is a big, thick, high-voltage lead coming out
>of the side of the picture tube. It looks something like a spark plug lead.
>Beware! This lead has quite a charge on it, even after the set is off and
>unplugged. I snipped it (insulated cutters and a heavy leather glove, keep one
>hand in your pocket at all times) and shorted it to the chassis...POP! Shorting
>several more times over the next few minutes got some much smaller pops.
>
>Other than that, make sure the caps in the high-voltage supply (the other end
>of the high-voltage lead) are discharged. The TV I took apart had a bleed
>resistor on the cap, but I put a screwdriver across it first anyway. With 25KV,
>might as well be sure!
>
>With that said, I might note that all the stuff inside has bloody house part
>numbers on them, which means I have no idea what's what anyway! I find this is
>often the case with consumer electronics! You can still scrounge hundreds of
>passive components, though.
>
Also, nobody else has yet mentioned all that nice magnet wire in the deflection coils, in case you want to join us radio troglodytes in winding some of your own coils. Keep everything that has a remote chance of being useful, since having a supply of parts around is the best incentive to doing some experimenting on a rainy day.

Mike, KK6GM

3963. QRP-L mailer bombed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-26 23:34:22 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Dec26.183422.11361@wb3ffv.ampr.org>
Source record: 115001

Just a note to those of you who are on the QRP-L mailing list at
netcom.com--I just had a message forwarded to me, and it said that the
mailing list apparently consists of 15 people and no more (down a bit
from its normal 500 or so!); seems there was some sort of computer burp
and almost everyone was dumped; the sender recommends that if you were
on the list that you go ahead and resubscribe to it to be safe--send
e-mail to listserv@netcom.com and in the text say subscribe qrp-l

He said he could only get an answering machine at N1ISTs number, so
doesn't know when or if the list can be restored. 73 and Queue Our Pea
DE WA8MCQ

3964. QRP newsgroup/mailer vote again

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 00:08:19 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Dec26.190819.19085@wb3ffv.ampr.org>
Source record: 115003

Attention QRPers: I blew it, as became immediately obvious when the first replies to my private straw poll trickled in. I should not have restricted the poll to just people who had subscribed and then left the QRP mailing list. There are a number of people who are interested and know about the list but chose to not subscribe, having been warned of the volume of e-mail on the list, and their votes and comments are just as important, or perhaps more so.

The poll continues, but open to anyone interested in a QRP forum, whether or not you were once a subscriber to the QRP list (originally on think.com and now on netcom.com). Would you prefer a QRP mailing list, which we have now, or would you rather see a newsgroup?

Send me your votes and comments via private e-mail. In accordance with proper netiquette, please reply only to me, not to the newsgroup where you see this posting (r.r.a.homebrew and r.r.a.misc) nor to the QRP list. I will tally the votes and comments later, and announce the availability of the complete file to anyone who wants me to e-mail it to them.

A reminder--this is a personal, private straw poll, completely unscientific and unofficial and nonbinding, and is not an official vote on establishment of a QRP newsgroup. The topic continues to simmer, and if it ever comes to a head, an official call for votes will be announced through proper channels.

73 DE WA8MCQ@hambbs.wb3ffv.ampr.org.

3965. Hayward RF design book available

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 00:08:46 UTC
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
Message-ID: <1994Dec26.190846.19085@wb3ffv.ampr.org>
Source record: 115004

I was browsing through the ads in the back of the Jan 95 QST on Christmas Eve and got my best Christmas present of all: the announcement of a "new" book from ARRL. Not just any book, but a reprinting of a classic which is very high on my list of "books that are worth stealing from a friends library even if it costs me a friend". :-)

The ad is on page 170, with a red background, and says "Design your own HF, VHF and UHF equipment!" The name of the book is Introduction to Radio Frequency Design by Wes Hayward, W7ZOI. The fine print tells it all--they call it a "timeless reprint". It was written in 1981, and I've had access to copies over the years. At work, some of the RF engineers have it on their bookshelves. Until now it was only available as a college level textbook (as far as I know) and we all know what that does to the price! I don't know if it's still available from Prentice-Hall, but if it is, it has to cost considerably more than the $30 ARRL wants for it. I presume this is a paperback, the size is 400 pages, and the ARRL version even comes with a 3 1/2" disk for IBM-compatibles with some design programs to accompany the text.

Those of you who are already familiar with the book will probably understand why I drove to work as soon as I saw the announcement (even though it's Christmas eve!), unlocked the building and FAXed my order off right away. For those who don't know it, in a very general way it's along the lines of the ARRLs Solid State Design for the Radio Amateur (by Hayward and DeMaw) but without all the projects, but that's really not a good comparison. It is much larger and much more in depth. On the bookshelf of the technically inclined ham it would sit alongside that book and RF Circuit Design by Chris Bowick, WD4C (1982, ninth printing 1992, currently available from Howard W. Sams). As to the level of difficulty, it's more along the lines of the Bowick book than SSD; this is definitely not for the beginner, although the beginner could still pick up a lot from it. The technically oriented ham will probably love the book. (I do.)

The chapter titles, at least in the original version, are Low Frequency Transistor Models; Filter Basics; Coupled Resonator Filters; Transmission Lines; Two-Port Networks; Practical Amplifiers and Mixers; Oscillators and Frequency Synthesizers; The Receiver: An RF System.

I was overjoyed to see ARRL publish this book at a price aimed at the hobbyist rather than the engineering textbook market. It deserves to have a much wider audience in the ham world, and this should help,

due to the price and availability from a widely known ham publisher.

And if anyone from ARRL reads this and is wondering what else we techies might be interested in seeing, how about a reprint of Zverevs monster on filters? I understand it's out of print now, and anecdotal evidence suggests it's a frequently stolen book from libraries! (The boss has one in his private technical library but we all know better than to steal that one!) Then there's the DeMaw book on ferromagnetic cores...

Standard disclaimers apply--I have no interest in any of the items mentioned except as an enthusiastic consumer, and do not work for any of the entities involved. (This is being posted to both r.r.a.homebrew and the QRP mailing list.) 73 DE WA8MCQ

3966. qrp info wanted re: tentec century 21

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 05:27:54 UTC
From: lgoodin@indirect.com
Message-ID: <D1GF6I.7Gp@indirect.com>
Source record: 115002

i have a tentec century 21, and i once had an article on it in one of the popular mags (73, cq, ham radio, or qst) but somehow we got seperated. NOW i am ready to work on my century 21 but have no article to work from.

the title of the article was "Some musings on QRP" and it detailed modifications to the century 21 to make it a great QRP rig with improved performance.

does this article sound familiar to any body, do not look in any magazine older than 1988.

--
R. L. Goodin | NN N 777777 MM MM FFFFF Y Y WHY ASK WYE?
lgoodin@indirect.com | N N N 7 M M M M FFF Y Y
(602) 516-2088 Home voice | N N N 7 M M M F Y
(602) 436-1595 Work voice | N NN 7 M M F Y

3967. Help! Pinouts for MAX232CWE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 07:57:00 UTC
From: jmaca@phoenix.phoenix.net
Message-ID: <3dohcd$j71@griffin.phoenix.net>
Source record: 115005

Help! Does anyone have the pinout description for the Maxim MAX232CWE?
This is the surface mount version. I ordered the wrong package by mistake
from DigiKey and don't have the pinout information for this configuration.

Any help would be much appreciated.

John Maca
AB5SS
email: jmaca@phoenix.net

3968. Re: R2/T2 Replacement ICs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 14:30:24 UTC
From: zlau@arrl.org
Message-ID: <1994Dec27.143024.19646@arrl.org>
Source record: 115010

N4SUP J Cain1220 (jcain1220@aol.com) wrote:
: I let the boards sit on the shelf too long.

: I have a set of the R2/T2 direct conversion receiver and phasing exciter
: boards by Rick Campbell that have been on the shelf for 18 months or so.
: In the meantime several of the ICs are apparently no longer manufactured.
: I am seeking information on direct substitutions. Can anyone help?

: The missing ICs are: LM 387, NE 5514 and NE 5532.

Allied Electronics carries the NE devices 1-800-433-5700.
Ocean State Electronics has the LM 387N 1-800-866-6626.

It appears that Digi Key 1-800-344-4539 now carries most, if
not all the National Line (LM parts), but apparently doesn't
carry the Signetics/Phillips parts anymore.
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3969. MANUAL FOR HP-606a?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 14:31:35 UTC
From: af104@detroit.freenet.org
Message-ID: <3dp8g7$sht@detroit.freenet.org>
Source record: 115009

Would appreciate a manual or photocopy of HP-606A RF signal
generator.

Thanks.

Jeff
WB5KZW
810-855-9209
--

3970. Re: Yeasu FT-727 Software

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 14:33:00 UTC
From: pete@freenet.grfn.org
Message-ID: <3dp8is$57i@locutus.Bethany.ORG>
Source record: 115014
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

Scott R. Weis KB2EAR (kb2ear@kb2ear.overleaf.com) wrote:
: Anyone know where I can get software to control my Yeasu FT-727 via the
: CAT port?

WORLDRAIDO, January 1995. Has an article in the BASIC STUFF column on
how to interface a Yaesu 747. I don't know if the interface is the
same, but I would not be suprised if it was.

Good luck!
--
-=-
Pete Hoffswell |pete@grfn.org |616-336-2304
Holland, Michigan |N9SSA |http://www.grfn.org/~pete
-=-

3971. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 15:44:30 UTC
From: zlau@arrl.org
Message-ID: <1994Dec27.154430.21233@arrl.org>
Source record: 115008

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <3dhnsg$93d@universe.digex.net> gc@universe.digex.net (Gary Chatters) writes:
: >In article <9412231733291129@fatal.com>,

: >Matt Edmondson <matt.edmondson@fatal.com> wrote:
: >>I'm getting ready to take my novice & Tech test but I don't have the
: >>Ca$h to buy a nice rig,how hard is it to build your own rig? Is voice

Building basically isn't the way to get on the air cheaply, though
there are experts who can go to Hamfests (amateur radio oriented
flea markets), buy stuff cheap, and design circuitry to use their
bargains.

Most people are better off buying a used radio. Modern technology
has made it just as inexpensive to sell/support a fully built and
tested unit as a well designed kit. Radios built by well known
manufacturers are very easy to sell, so you can probably get your
most/all your money back when you upgrade to a nicer radio. I
think Drake and Ten Tec even support their earliest models, so you
can still get them fixed by the factory.

: >Code (CW) is the easiest mode to implement, which is one reason
: >the QRP rigs use it.

: This is only trivially true. At VHF, a FM rig will likely be simpler
: than a CW rig. The receiver is easier, and the transmitter is only
: a varactor and mike amplifier stage different from a CW transmitter.

Gary, is of course, speaking in terms of theory, as opposed to
practice. HF QRP CW rig designs are easy to find in print.

On the other hand, I'm still waiting to see a modern 2M FM
transceiver design for people to copy (deciphering and adapting
application note written for non-amateur needs doesn't count).
A particular challenge is getting the transmitter set up with
the proper deviation--it helps if you can cheat and hook the
radio up to a service monitor or spectrum analyzer...

The simplest VHF CW rig is a keyed overtone oscillator--no
need to bother with multiplier stages. The varactor technique
doesn't quite work--you can't get enough deviation to be
compatible with existing radios unless you modulate a low
frequency stage and multiply.

: At HF, the receiver for SSB/RTTY/CW is essentially the same except
: for possible differences in the IF filter bandwidth. The transmitter
: for RTTY is again only marginally more complex than for CW, requiring

: only a capacitor and a switching transistor added to the oscillator.

RTTY generally requires greater frequency stability, at least with
off the shelf modem designs. An expert could design an adaptive
modem to fix the problem, but good luck getting him to give you
the improved design.

A significant disadvantage of voice modes is the need for more power.
If you need 100 watts to get through on voice, 10 watts with CW will
do just fine. This is probably why you see so many CW QRP transceivers,
compared to homebrew SSB designs. You get lots of bang/buck.

BTW, I've also designed SSB/CW VHF gear and FM microwave gear.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3972. Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 15:51:07 UTC
From: s0003040@moncol.monmouth.edu
Message-ID: <3dpd5b$rnm@monmouth.edu>
Source record: 115007
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Does anyone have any insight to the quality of the radio kits
produced by Ramsey (sp?) Electronics? Has anyone here built one?
Any comments appreciated, any comments mail to me at
mourning@raven.cybercom.com, doubly so. Thank you!

73
Michael Carson

3973. How to Test Capacitors?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 17:09:20 UTC
From: TLIAO@vmd.cso.uiuc.edu
Message-ID: <170999CE2.TLIAO@vmd.cso.uiuc.edu>
Source record: 115011

Hi, all!

My radio is dead (Sony FM/AM Stereo Cassette-Corder CFS-7), although the cassette recorder can still play back when the power switch is turned to Off/Sleep. It all happend one day before Christmas, when I plugged in the power outlet with the power switch on the radio in the On position. After that, the output, either the radio signal or the playback (with the power switch in the On position) would get very weak after some time, usually a few minutes. This time before dying has gotten shorter and shorter; now it is instantaneous.

From the memories of the days of building radios in my childhood, I vaguely remember this must be a problem with one of the capacitors, but I don't remember how to test them. I have a multirange tester. I suppose if I can find out which one is faulty, I can pick one up at Radio Shack. Any help will be appreciated.

Tim Liao

3974. Question Convert 11m CB to 10mHF rig 6m rig

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 18:32:21 UTC
From: mrlink@nickel.ucs.indiana.edu
Message-ID: <3dpmjl$osr@usenet.ucs.indiana.edu>
Source record: 115012

Please bear with me, I just passed my Tech-Nocode and am studying for
Tech+ and beyond and I wanted to ask a few questions.

Is it hard to have someone convert a CB to a 10mHF rig?

Is it possible to convert a CB to a 6m rig?

If both of these are possible which is better. I know, better is a
relative term, but better performance out of the CB hardware.

Thanks for all your input!

73,

-Matt
(non-ticketer YET!)
--

Matthew R. Link MrLink@indiana.edu | Water is life!
University Computing Services- Coordinator Campus Wide |
http://www.cs.indiana.edu/hyplan/mrlink.html | Paddle or Die!

3975. HF Amp Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-27 22:21:47 UTC
From: ells22@aol.com
Message-ID: <3dq41r$31h@newsbf02.news.aol.com>
Source record: 115017

Am building a 4-1000A Amp and would like to find a B & W 850/160 inductor assembly if anyone has one for sale. Is there anything equivqlent around in a commercial part? I guess if I have to I can wind my own but a commercial part would be nice.

Tnx, Russ, WA6CWV. ells22@aol.com

3976. Re: Help! Pinouts for MAX232CWE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 01:08:23 UTC
From: clifto@indep1.chi.il.us
Message-ID: <D1Hxu0.F33@indep1.chi.il.us>
Source record: 115016

In article <3dohcd$j71@griffin.phoenix.net> jmaca@phoenix.phoenix.net (John Maca) writes:
>Help! Does anyone have the pinout description for the Maxim MAX232CWE?
>This is the surface mount version. I ordered the wrong package by mistake
>from DigiKey and don't have the pinout information for this configuration.

That's the SO package. Pinout is the same as for the DIP package,
according to the data book. Email me if that's not enough info
(okay, I admit it, I'm too lazy to type it in unless you need it :-).

--
Cliff Sharp Never get into fights with ugly people.
WA9PDM They have nothing to lose.
clifto@indep1.chi.il.us --The Fourth Law of Reality

3977. Icom 728 Mods?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 01:26:41 UTC
From: CJKM92A@prodigy.com
Message-ID: <3dqesh$j1e@usenetw1.news.prodigy.com>
Source record: 115013

Just got an Icom 728 any one have any mods for this rig?
-
LEE WAY CJKM92A@prodigy.com

3978. HV Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 04:07:01 UTC
From: bsn@ziggy.ph.utexas.edu
Message-ID: <3dqo95$ed7@geraldo.cc.utexas.edu>
Source record: 114918

Can someone recommend a source of HV disk ceramic capacitors. I need
values like 500pf at 10KV and .005-0.01mf at voltages from 3KV to 6KV.
These are to replace the tubular paper caps in the HV supply in a Tek scope.

Please respond to bsn@fusion.ph.utexas.edu rather than the headre
address or on the net.

Thanks,
Barry W5KH

3979. Re: 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 08:41:23 UTC
From: dl278@cleveland.Freenet.Edu
Message-ID: <3dr8bj$psu@usenet.INS.CWRU.Edu>
Source record: 114923

In a previous article, wb4ijn@awod.com (Steve Thomason) says:

>
>My suggestion is to not solid-state the power supply. All of my
>516F-2's are tubed. My Collins "expert" friends tell me that the
>higher voltages are very detrimental to some of the tubes in the
>KWM-2's and 32S-x's. You can still get 5R4's and 5U4's pretty cheap.
>Buy a half-dozen of each and they'll outlast you. email me if you need
>sources of tubes.
1>
>73, Steve
>
>
>
>
This may very well be true. It seems to me that when I converted mine
some time back with the kit that someone was selling there was a resistor
that had to be installed to drop the voltage down to acceptable levels.

Unfortunately, my kwm-2a is in storage at the moment so I can't
be more specific.

73

bill n5lmx/da1wg
--
email: bgraham@tecnet1.jcte.jcs.mil
ampr: N5LMX@K9IU.IN.USA.NA (but I'm in Germany (DA1WG), honest!)
"My head hurts, my feet stink and I don't love Jesus!"- J. Buffett

3980. Re: B&W miniductors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 08:46:31 UTC
From: dl278@cleveland.Freenet.Edu
Message-ID: <3dr8l7$qje@usenet.INS.CWRU.Edu>
Source record: 114924

In a previous article, mjsilva@ix.netcom.com (michael silva) says:

>In <3d62b4$k8s@usenet.INS.CWRU.Edu> dl278@cleveland.Freenet.Edu (William
>J. Graham) writes:
>
>>
>>I recently decided to build an antenna tuner for an SW receiver.
>>I soon discovered that I had no catalogs that seemed to carry
>>B&W miniductors which are all I need to do it (being lazy and not
>>wanting to try winding coils).
>>
>>Anyone have a possible source?
>>
>Ocean State Electronics has them in their catalog (with lots of other
>good stuff). They're in Westerly, RI, and their number as of 1992 is
>1-800-866-6626 / 1-401-596-3080.
>
>73,
>Mike, KK6GM
>
>

TNX OM,

OS ' latest catalog #945 1994/95 seesm to have dropped them.
Not only that, on my last order, I got VERY upset with them as they
cancelled the whole order because a few items were not available.

Bill

n5lmx/da1wg
.
--
email: bgraham@tecnet1.jcte.jcs.mil
ampr: N5LMX@K9IU.IN.USA.NA (but I'm in Germany (DA1WG), honest!)
"My head hurts, my feet stink and I don't love Jesus!"- J. Buffett

3981. Need specs on a diode

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 12:53:53 UTC
From: jwl@cray.com
Message-ID: <1994Dec28.065353.13055@walter.cray.com>
Source record: 114919

I've got a bunch of 1n1492 diodes that are bad and wonder if
I could replace them with 1n4007 diodes? I don't have a book
that contains diode specs, so could someone please look up
the 1n1492 please? It is a GE part.

Thanks,
Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3982. Hamcom30 schematic

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 13:44:02 UTC
From: jtesta@freenet.columbus.oh.us
Message-ID: <3drq32$q7g@acme.freenet.columbus.oh.us>
Source record: 114920

Well since I started this thread, I guess it is time for an update. Got
the interface built and decoded a CW transmission. Unfortumately only
1 so far and that is the only type. (Either CW operator had a good
fist or was using a CW generator, it decode about 20 lines perfectly).
Still working on RTTY, AMTOR, etc will let everyone know when I have
succeeded. TO the author, great software.
73, joe
--
Joseph S. Testa, Database Administrator, Computer People Consulting
N8XCT, Official Relay Station (ORS),
Local Govt Liaison (LGL) Pickaway County OH,
Fond reader of Part 97, studying code and hope to pass 5WPM soon.....

3983. Help! Pinouts for MAX232

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 15:20:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9412281822072940@kbsbbs.com>
Source record: 114932

JM>Help! Does anyone have the pinout description for the Maxim
JM>MAX232CWE? This is the surface mount version. I ordered the wrong
JM>package by mistake from DigiKey and don't have the pinout information
JM>for this configuration.
JM>Any help would be much appreciated.

Greetings John:

I took a quick look in my Maxim data book and it shows one
pictorial for the 232 with a DIP/SO label under it. Does this mean the
pinout is the same for both the dip version and the SO surface mount
version? I would hazard a guess that it does but no guarantees, hi. The
MAX232CWE is identified as 16 wide SO package designed for the
temperature range of 0 to +70C.

Good luck and 73 de VE7TMA.

Very Best Regards,
T.M. Alldread INTERNET:tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3984. ISA Card DTMF Decoder Ne

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 15:56:00 UTC
From: tom.alldread@kbsbbs.com
Message-ID: <9412281822072939@kbsbbs.com>
Source record: 114930

SM>I am looking for an ISA bus board which has DTMF encode/decode
SM>capability with some buffering to use in a PC based repeater
SM>control application.

SM>Any suggestions of possible vendors appreciated

SM>Steve Muther WF6R stevem@w6yx.stanford.edu

Greetings Steve:

If you can not find one you might consider building one on a JDR Micro Systems prototype PCB. I built an ISA board on a JDR prototype PCB about a year and a half ago and it has been working out fine for me. The JDR proto board that I used has all the buss interface and address decoding done for you and all you have to add is your application specific parts. You need to enjoy wire wrapping though, hi. JDR also sell a buss extender card which is a good thing to have to trouble shoot the hardware as it allows one to gain access to the board for testing.

I would be interested in hearing more about your controller.
Good luck with your project.

73
Tom, VE7TMA

Very Best Regards,
T.M. Alldread INTERNET:tom.alldread@kbsbbs.com

---
* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

3985. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 16:01:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec28.160108.7886@ke4zv.atl.ga.us>
Source record: 114931

In article <1994Dec27.154430.21233@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>
>: >Code (CW) is the easiest mode to implement, which is one reason
>: >the QRP rigs use it.
>
>: This is only trivially true. At VHF, a FM rig will likely be simpler
>: than a CW rig. The receiver is easier, and the transmitter is only
>: a varactor and mike amplifier stage different from a CW transmitter.
>
>Gary, is of course, speaking in terms of theory, as opposed to
>practice. HF QRP CW rig designs are easy to find in print.
>
>On the other hand, I'm still waiting to see a modern 2M FM
>transceiver design for people to copy (deciphering and adapting
>application note written for non-amateur needs doesn't count).
>A particular challenge is getting the transmitter set up with
>the proper deviation--it helps if you can cheat and hook the
>radio up to a service monitor or spectrum analyzer...

Oh, please. Appnotes are about as good as the magazine articles
featuring HF QRP rigs. Heathkit is gone. No one gets "insert
component lead through hole, solder (1)" anymore. The Motorola
evaluation kits come with circuit boards, chips, and detailed
part numbers and ordering info for the passive parts. The MC2833
2 meter transmitter kit goes together in under 1/2 hour, and that
includes waiting for the soldering iron to heat up.

As far as setting deviation, you can set it "good enough" just
by listening to the relative loudness of your audio against a
friend's known commercial rig. A scanner will do in a pinch as
the monitor receiver, or you can use your homebrewed receiver
as the monitor receiver. A service monitor is *nice* if you
care whether your deviation is 3 kHz or 4 kHz, but in the
real world no one cares about that. As long as your signal
has about the same deviation, as determined by ear, as other
stations, it's fine.

>The simplest VHF CW rig is a keyed overtone oscillator--no
>need to bother with multiplier stages. The varactor technique
>doesn't quite work--you can't get enough deviation to be
>compatible with existing radios unless you modulate a low
>frequency stage and multiply.

Or unless you directly modulate the VCO in the PLL loop. Since
it's all in the one chip, the complexity is transparent to the
builder. Note too that FM is fairly tolerant of frequency errors.
If you're a couple kilohertz off frequency and/or the channel
center wanders a bit with a FM voice transmitter, it won't matter
much, but it's deadly to CW.

>: At HF, the receiver for SSB/RTTY/CW is essentially the same except
>: for possible differences in the IF filter bandwidth. The transmitter
>: for RTTY is again only marginally more complex than for CW, requiring
>: only a capacitor and a switching transistor added to the oscillator.
>
>RTTY generally requires greater frequency stability, at least with
>off the shelf modem designs. An expert could design an adaptive
>modem to fix the problem, but good luck getting him to give you
>the improved design.

Most of the RTTY modems today use PLL demodulators, and are fairly
tolerant of tuning errors. The higher performance modems use some
variant of the filter technique and are critical, about as critical
as CW with a narrow filter. Since the postulated rigs are both
crystal controlled, with the former on/off keyed (chirp chirp)
and the latter FSK shifted by a cap and switch transistor, stability
will be similar, and adequate, for either mode.

>A significant disadvantage of voice modes is the need for more power.
>If you need 100 watts to get through on voice, 10 watts with CW will
>do just fine. This is probably why you see so many CW QRP transceivers,
>compared to homebrew SSB designs. You get lots of bang/buck.

Yep, no argument there. If Dxing is your thing, low power homebrew
SSB rigs aren't the way to go, unless you like a real challenge.
However, low power digital rigs can do just fine. With the right
coherent correlator, they'll do 10-12 db better than OOK CW. That's
admittedly more complex than most digital operators bother to be. Of
course not everyone is pursuing the ultimate weak signal experience,
and voice rigs are great for passing lots of information quickly
under stronger signal conditions, such as are found when operating
near the MUF. 5 watts SSB will deliver a strong signal over continent
spanning distances in that case. And FM voice is perfect for local
communications, direct or via a repeater, on VHF. It really depends
on what you want to do. IMHO Dxing is overrated and over-emphasized
as the sole metric for station performance.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3986. Re: HF Amp Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 16:03:44 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec28.160344.7962@ke4zv.atl.ga.us>
Source record: 114922

In article <3dq41r$31h@newsbf02.news.aol.com> ells22@aol.com (ELLS22) writes:
>Am building a 4-1000A Amp and would like to find a B & W 850/160 inductor
>assembly if anyone has one for sale. Is there anything equivqlent around
>in a commercial part? I guess if I have to I can wind my own but a
>commercial part would be nice.

Radiokit used to carry these as stock items. I haven't gotten a catalog
recently, but they probably still have them.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

3987. Re: Homebrew printed circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 18:09:27 UTC
From: jwl@cray.com
Message-ID: <1994Dec28.120927.17804@walter.cray.com>
Source record: 114936

Who Cares? (plato@metronet.com) wrote:
: blizzard@io.org (dave blizzard) wrote:
: >Now that the long cold winter has set in, my thoughts turn to homebrew
: >equipment. I'm attempting to build the RF noise bridge described
: >in the ARRL antenna book but that means I need to make a printed circuit. Oops
: >never done that before.
: >
: >Any help and/or advice would be appreciated. I tried the Radio Shack
: >pen resist and ferric chloride approach only to discover that the
: >pen resist doesn't prevent the traces from being dissolved.
: >
: >If you have any practical advice, please email here or direct to
: >blizzard@io.org
: >
: >Thanks de Dave VE3SVL
: I have successfully made many small PC boards using the toner transfer systems available through mail
: order and in some electronics stores. For my use, I have used my laser printer to print designs from my
: Tango package. You can also copy a board layout from a magazine with a standard copier.
: This is ironed on very carefully with a hot iron onto VERY clean copper. A water soak
: removes the paper backing and standard etching techniques begin here. There are several of these
: special tranfer paper brands available. The real trick is in the iron-down. It takes a bit of practice, but I
: even made two sided boards using this method.
: happy boarding!

What is a Tango package? Do you have a brand name for the toner transfer
systems?

Thanks,
Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

3988. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 18:28:37 UTC
From: mack@ncifcrf.gov
Message-ID: <D1J9zp.Fsy@ncifcrf.gov>
Source record: 114933

In article <9412231733291129@fatal.com> matt.edmondson@fatal.com (Matt Edmondson) writes:
>I'm getting ready to take my novice & Tech test but I don't have the
>Ca$h to buy a nice rig,how hard is it to build your own rig? Is voice
>a lot harder to build then code? ANY tip's /suggestions would be GREATLY
>appreciated.
>
>Matt Edmondson
>matt.edmondson@fatal.com

Back in the 50's and 60's it was still possible for the motivated ham to build
their own station. Parts were plentiful and rigs were less complicated than
today. However since then production of electronic equipt is more automated,
parts are not available in onesies and twosies and building is only done
by stalwarts who have access to fairly pricey test equipment. Doesn't mean
you can't still have fun in your basement, but building a rig you can buy
for $500 will be a multiyear project for the average person. Start with
something more modest.

Ham radio is not a cheap hobby. Still rigs 10-15yrs old will
do most of what today's rigs do, but at half the price.

Hope you enjoy ham radio

Joe Mack NA3T (been in it for 35 yrs now)
mack@ncifcrf.gov

3989. Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 18:34:21 UTC
From: geret@gov.nt.ca
Message-ID: <1994Dec28.183421.25527@gov.nt.ca>
Source record: 114921

Does anyone know if heating PC board etching solution (ferric oxide, I think) will make the etching process faster? Is there an optimum temperature? Can the used solution be restored by reversing the process?

Larry Horlick, VE8HL
geret@inukshuk.gov.nt.ca

3990. Call FCC for "New" call signs!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 18:39:15 UTC
From: mrlink@nickel.ucs.indiana.edu
Message-ID: <3dsbcj$pge@usenet.ucs.indiana.edu>
Source record: 114935

I just talked to the ARRL today and found the phone number to call the
FCC to find out your "New" call sign.
Here goes:
1-800-322-1117

They suggested that you wait about 3 weeks from the time you passed
your test until the time you call.

Hope this helps!

-Matt
(waiting on ticket!)

--

Matthew R. Link MrLink@indiana.edu | Water is life!
University Computing Services- Coordinator Campus Wide |
http://www.cs.indiana.edu/hyplan/mrlink.html | Paddle or Die!

3991. Tracking transmitter with a 20-30 mile range needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 18:49:09 UTC
From: "P. Garrison" <peg@phoenix.net>
Message-ID: <3dsbv5$ng@griffin.phoenix.net>
Source record: 114870
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

I have an immediate need for a transmitter that can broadcast up to
30 miles that is simple in design, few components and compact design.
A single board computer will send a couple of bytes of information thru
this transmitter. The target landscape that the transmitter will
have to transmit thru is a flat city landscape with few high buildings.

The two applications I have planned is a vehicular tracking transmission
and a weather information beacon that is stationary on ground some
30 miles from my home.

Please help me with this project! Thanks!!!!

Paul Garrison at
peg@phoenix.net

3992. "Technowhizzy" project

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 19:46:11 UTC
From: hduff@humnet.westonia.com
Message-ID: <7580301495002@humnet.westonia.com>
Source record: 114927

I would like to hear from any of you have built the "Technowhizzy"
project from 73 magazine of a couple of years ago.
I'm particularly interested in the 2 watt power amplifier board.
Please reply here or via e-mail hduff@humnet.westonia.com
Thanks..Hugh VE3OYH Toronto

• NFX v1.3 [000]

--

HumberNet LSS (Learning Support System) - Humber College, Toronto
"Tomorrow's communication and learning environment, today"

3993. Re: Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 19:57:13 UTC
From: k8unp@bcfreenet.seflin.lib.fl.us
Message-ID: <3dsfuq$do9@bcfreenet.seflin.lib.fl.us>
Source record: 114925

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <199411101859.AA01889@clemenza.xilinx.com> jho@xilinx.COM (Jonathan Ho) writes:
: >>I am looking for plans to construct a homebrew antenna tower.
: >>Either that or a pointer to a reference manual that would
: >>contain that type of information. Please post your information
: >>for the benefit of others that may be interested.
: >
: >I think buying a used tower will be easier than build your own since
: >there are safety and other issues, if $$ is your primary motivation
: >for this project.

: Used towers can also be a safety hazard. Rohn warns against using
: used towers. This is more than just liability lawyer blather, and
: more than just a marketing ploy (though it is that too). You don't
: know what kind of stresses a used tower may have endured before you
: got it, and you don't know what hidden corrosion problems it may
: have. There are testing companies that can determine if the tower
: sections are still sound, but the cost of that testing may be more
: than what you save by buying the used tower. (There are ways to
: test tower sections yourself, and that can be viable if you're
: willing to shoulder the extra liability. I posted an explanation
: of how to do that a few months ago.)

: If you are an experienced structural engineer, and if you are an
: ASME certified welder, you could perhaps make your own tower to
: a standard that would be as safe as commercial towers. But if you
: are the typical jackleg tinkerer, you'll likely be making an accident
: waiting to happen. Remember that you, or some innocent passerby,
: can be killed by a failing tower.

: If we throw out the idea of making a climbable tower, there are
: plans in the ARRL Handbook for making a 40 foot wooden A frame
: antenna mast. Properly guyed, it's reasonably safe as long as
: you keep an eye out for rot and termites.

: Gary
: --
: Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
: Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
: 534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
: Lawrenceville, GA 30244 | |

Some of what Gary sez is true... You should inspect any used tower
sections you get for cracked welds and stress... BUT...

I have put up 30-40 towers in Florida, mostly old Rohn 25 which came off commercial sites, and our club sold for club funds to the hams where they were installed...
I have yet to hear that any one of them had a problem or came down... and this is through two hurricanes!
Used tower sections are usually galvanized and strucutrally wsound...

You might do well to look at that vs. building your own.

--
________\ -.-.
Have Fun! 73, dah-di-dah \ \ \| \ \ \ --.-
|X|
Peter Rimmel |X|
k8unp@bcfreenet.seflin.lib.fl.us |X|
K8UNP@N4HHP.#HWDFL.FL.USA.NOAM (packet) _______|X|______

3994. Re: Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 21:24:08 UTC
From: djwang@ginger.biophys.upenn.edu
Message-ID: <3dsl1o$n53@netnews.upenn.edu>
Source record: 114926

In article <1994Dec28.183421.25527@gov.nt.ca>, geret@gov.nt.ca (Larry Horlick,Iqaluit,9795366,) writes:
|> Does anyone know if heating PC board etching solution (ferric oxide, I think)

It is ferric chloride.

|> will make the etching process faster? Is there an optimum temperature? Can

Yes, it will, as the chemical process is enhanced by increasing temperature. Stirring the solution (by gas pump such as the kind you use for a fish tank) will also help since it increases the circulation and therefore the chance for collision between reactants (copper and ferric ion in this case). In general, the higher the temperature the better, however, at high enough temperature the etch-resistant coating may peel off which will ruin the PCB.

|> the used solution be restored by reversing the process?
|>

It is probably not worth the while since, you are left with a mixture of copper ion and iron powder in the solution. The copper on the PCB are oxidized to cupric ions which dissolved itself in the solution, while the ferric ion get reduced to form iron particles. To restore them requires separation and then oxidizing the ion.

|> Larry Horlick, VE8HL
|> geret@inukshuk.gov.nt.ca

73 D.J. Wang, N2YKP

3995. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-28 22:30:21 UTC
From: zlau@arrl.org
Message-ID: <1994Dec28.223021.10473@arrl.org>
Source record: 114938

KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <1994Dec27.154430.21233@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
: >Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: >practice. HF QRP CW rig designs are easy to find in print.
: >
: >On the other hand, I'm still waiting to see a modern 2M FM
: >transceiver design for people to copy (deciphering and adapting
: >application note written for non-amateur needs doesn't count).
: >A particular challenge is getting the transmitter set up with
: >the proper deviation--it helps if you can cheat and hook the
: >radio up to a service monitor or spectrum analyzer...

: Oh, please. Appnotes are about as good as the magazine articles
: featuring HF QRP rigs. Heathkit is gone. No one gets "insert
: component lead through hole, solder (1)" anymore. The Motorola
: evaluation kits come with circuit boards, chips, and detailed
: part numbers and ordering info for the passive parts. The MC2833
: 2 meter transmitter kit goes together in under 1/2 hour, and that
: includes waiting for the soldering iron to heat up.

The magazine articles generally give you all of the component
values. If not, you can usually get them from the author, who,
by the way, thought the circuit worked well enough to publish.

Even if you have an engineering degree, it isn't always trivial
to redesign circuits using application specific ICs. Problem
is the *missing* information. Exactly how does the impedances
and transfer functions change as you change the frequency?
What if your desired frequency is outside the suggested range
of the device?

True, an experienced experimenter knows how to tweak stuff on
the bench till it works. Usually, they build the suggested
circuit *exactly*, and then build the modified version.
Lots of beginners don't have time for this, and start off
with what they think will work best, and never get it going.
I think designing is like photography, if you design and
build enough stuff eventually you figure out what works
and what doesn't (good photographers seem to use lots of
film).

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3996. Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 00:30:42 UTC
From: zlau@arrl.org
Message-ID: <1994Dec29.003042.13049@arrl.org>
Source record: 114940

How good should homebrew transceivers work?

My first attempt at a quality design was the
QRP Three Bander, published in the Oct 1990
QST.

The CW transciever design accomplished the
following without test equipment:

1. Allows accurate spotting of the transmit
signal--no calling 100 Hz or even 1 kHz off
frequency unless you get lazy or rushed.

2. Textbook shaping of the signal--no hard or
soft keying.

3. Frequency stable signal with no sign of chirp.

Amazingly, I've seen many designs, even
complicated commercial ones, that can't
accomplish these three simple tasks.

So, are these standards too high? Should
publishers merely note projects with
problems and leave it as an exercise for
the reader to solve? Or, is it important
for homebrew projects to sound good on
the air? After all, a bad transmitter
can affect a lot of people.

BTW, the QSK design fit on a single circuit
board with no jumper wires--not exactly
a complex circuit. On the other hand, its
not the cheapest design you could build.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

3997. Re: Help! Pinouts for MAX232CWE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 01:08:48 UTC
From: jmaca@phoenix.phoenix.net
Message-ID: <3dt273$10d@griffin.phoenix.net>
Source record: 114871

To all,
Thanks for your replys... I have the pinouts now and won't toast my chip.

John Maca
AB5SS

John Maca (jmaca@phoenix.phoenix.net) wrote:
: Help! Does anyone have the pinout description for the Maxim MAX232CWE?
: This is the surface mount version. I ordered the wrong package by mistake
: from DigiKey and don't have the pinout information for this configuration.

: Any help would be much appreciated.

: John Maca
: AB5SS
: email: jmaca@phoenix.net

3998. Re: HF Amp Parts

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 01:14:12 UTC
From: jmaass@freenet.columbus.oh.us
Message-ID: <3dt2h4$ckb@acme.freenet.columbus.oh.us>
Source record: 114928

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: In article <3dq41r$31h@newsbf02.news.aol.com> ells22@aol.com (ELLS22) writes:
: >Am building a 4-1000A Amp and would like to find a B & W 850/160 inductor
: >assembly if anyone has one for sale. Is there anything equivqlent around
: >in a commercial part? I guess if I have to I can wind my own but a
: >commercial part would be nice.

: Radiokit used to carry these as stock items. I haven't gotten a catalog
: recently, but they probably still have them.

Radiokit is trimming down it's business quite a bit, and won't have a
new catalog, according to a conversation I had with them last week.
Call to see if they have what you want!

Radiokit: (603) 635-2235.

You might also try Surplus Sales of Nebraska (402) 346-4750.

73,
--
Jeff Maass NW of Columbus Ohio Amateur Radio K8ND
USPSA/IPSC # L-1192

3999. Re: 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 01:16:27 UTC
From: sbertsch@magnus.acs.ohio-state.edu
Message-ID: <3dt2lb$mbq@charm.magnus.acs.ohio-state.edu>
Source record: 114939

In article <3dhdp4$mja@ixnews2.ix.netcom.com>,
Jim Lockwood <jlockwd@ix.netcom.com> wrote:
>Another reason to *not* solid state a power supply is that the instant
>on of the HV can shorten the life of the tubes in the radio. By dumb
>luck, the turn on delay of tube type rectifers is better for the other
>firebottles in the rig.

Yet another reason: very often the electrolytic filter caps were rated
very close to the B+ voltage; an "instant on" HV supply could rise above
the max rating of the caps before the tubes heated and loaded it down.

4000. Re: Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 02:19:28 UTC
From: amsoft@epix.net
Message-ID: <3dt6bg$rt3@grape.epix.net>
Source record: 114929
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

> Does anyone have any insight to the quality of the radio kits
>produced by Ramsey (sp?) Electronics? Has anyone here built one?
>Any comments appreciated, any comments mail to me at
>mourning@raven.cybercom.com, doubly so. Thank you!

It is very nice to have any company that provides kits for the builder.
Ever since Heathkit stopped making kits, its been a big vacumn for builders.
Ramsey has a reputable name, a new modern factory, and the latest wave
soldering machine.

I also like the S.& S. Electronics kits very-very much.

4001. Standard VHF tx/rx plans?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 02:43:50 UTC
From: mbalch@panix.com
Message-ID: <3dt7p6$hnu@panix2.panix.com>
Source record: 114934

Hi all,

I am looking for leads on circuit diagrams for "standard" transmitters and receivers in the VHF band that utilize the 455KHz and 10.7MHz IFs. I have heard that radio control systems on 50/72MHz use these IFs and that they are elsewhere standard. This is simply for the purpose of not re-inventing the wheel and for learning how things are done in the mainstream. I would greatly appreciate any such leads.

Please reply to me via email (mbalch@panix.com) because there is so much traffic here and I often lose news messages when I don't login often enough.

Thanks!

Mark Balch

4002. FREE HAM NEWSLETTER

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 04:33:00 UTC
From: AMSOFT@EPIX.NET
Message-ID: <3dt4vu$reb@grape.epix.net>
Source record: 114941
Cross-posted to: rec.radio.swap,rec.radio.shortwave,rec.radio.scanner,rec.radio.amateur.space,rec.radio.amateur.policy,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.digital.misc,rec.radio.amateur.antenna

The Jan 95 "The World of Ham Radio" CD-ROM is now available from AmSoft.
This CD-ROM offers more ham programs than any of the others out there!
Over 20,000 IBM files for amateur radio are included on the CD-ROM.
Includes FCC CALLSIGN callbook with US & Foeriegn listings current to
12/94, and AMCALL the new logbook from AmSoft that will auto log from
the CD for you. Over 1,350 Radio Mods. The latest HST images available.
Over 700 Megabytes of Amateur Radio Software packed into 1 CD.

This CD-ROM is published every 4 months without delay in JAN MAY & SEP

If you would like to get a FREE newsletter about the January 1995 AmSoft
CD-ROM please leave me your E-mail information at: amsoft@epix.net

Pete, KC3TL

4003. Re: Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 04:38:17 UTC
From: bob@raddev.com
Message-ID: <3dtefp$dj7@remus.ultranet.com>
Source record: 114937
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <3dpd5b$rnm@monmouth.edu>, s0003040@moncol.monmouth.edu (MICHAEL CARSON) says:
>
> Does anyone have any insight to the quality of the radio kits
>produced by Ramsey (sp?) Electronics? Has anyone here built one?
>Any comments appreciated, any comments mail to me at
>mourning@raven.cybercom.com, doubly so. Thank you!
>
> 73
> Michael Carson
>

There was a review of the Ramsey 2m kit in 73 Magazine
Nov 93. If you send me your postal address I'll mail
you a copy if you wish along with a Ramsey Catalog.

Bob

==========
Radio Devices email for complete cdrom catalog
32 Queens View Road QRZ! $14.95, Buckmaster $42.95
Marlboro, MA 01752 Linux, OS/2, MAC, Windows, Unix
(508)480-0502 KD1GG Ramsey Kits, Antennas West (Ham)
==========

4004. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 07:39:24 UTC
From: sfarmer@tulsa.com
Message-ID: <sfarmer-2912941239240001@tty14.com1.tulsa.com>
Source record: 114967

In article <1994Dec29.143245.12470@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us
(Gary Coffman) wrote:
[snip]
>
> I expect, though I probably expect too much, that a
> published project will work as advertised when assembled
> with reasonable competence. If I have to redesign it to
> make it work properly, I'll have a low opinion of the
> author. That's not to say that basic project concepts
> have to be complete, or the ultimate in performance.
> They can serve as a platform for more refined designs,
> but that should be clearly explained up front in the
> article.

Here's an idea Gary: why don't you design, implement, debug
and then publish a tranceiver (any band(s), any mode) using the
simple "it's in one or two chips" approach you're always talking
about. Then the rest of us could actually try it out to see if
it flies. Short of that, all I can tell about your opinions on
homebrewing at this point is that you're very generous with them.

73 de wa5rpf

4005. Re: Wierd energy device on WWW

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 11:07:49 UTC
From: kevin.jessup@mail.mei.com
Message-ID: <kevin.jessup.232.0023F471@mail.mei.com>
Source record: 114953

In article <D1544o.BIB@eskimo.com> billb@eskimo.com (William Beaty) writes:

>moritz@ipers1.e-technik.uni-stuttgart.de wrote:
>: In article <D0ttM9.AGJ@eskimo.com>, William Beaty <billb@eskimo.com> wrote:

>: >The Anomolous Science guys on the Keelynet BBS have just made public
>: >a device which seems to be giving more energy out than in

The word to watch for, in all such posts, is "seems".

>: Has the Internet done you any harm, or why are you waisting bandwidth
>: with nonsense?

>Nonsense to some is a hobby to others.

>The cry of the crank inventor (They called the Wright Brothers crazy!)
>is cliche' but still true. All through history there have been amazing
>discoveries which were dismissed as crazy.

Except for those "inventions" which violate the LAWS (not theorys) of
thermodynamics. Such "inventions" always were, and will continue to be,
crazy. A two-semester course in college-level thermo should be required
prior for anyone attempting to publish this instant-energy crappola!

> Keep your eye on the
>inventions which are obviously impossible.

What a classic! Can I frame that one!?

---
kevin.jessup@mail.mei.com "It is dangerous to put limits on wireless."
marquette electronics inc Guglielmo Marconi, 1932
milwaukee, wi 53223
LIVE FREE OR DIE! N9SQB ARRL

4006. Re: 5U4 and 5R4 replacements?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 13:46:07 UTC
From: jwl@cray.com
Message-ID: <1994Dec29.074608.2326@walter.cray.com>
Source record: 114944

Steve Bertsch (sbertsch@magnus.acs.ohio-state.edu) wrote:
: In article <3dhdp4$mja@ixnews2.ix.netcom.com>,
: Jim Lockwood <jlockwd@ix.netcom.com> wrote:
: >Another reason to *not* solid state a power supply is that the instant
: >on of the HV can shorten the life of the tubes in the radio. By dumb
: >luck, the turn on delay of tube type rectifers is better for the other
: >firebottles in the rig.

: Yet another reason: very often the electrolytic filter caps were rated
: very close to the B+ voltage; an "instant on" HV supply could rise above
: the max rating of the caps before the tubes heated and loaded it down.

I appreciate all of the comments including this one. I'll be replacing
the tubes with tubes. So much for modernization! 8^) 8^)

All of the points were good.

Thanks to all.
Happy New Year!

Jim.

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

4007. Re: Call FCC for "New" call signs!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 13:59:12 UTC
From: jwl@cray.com
Message-ID: <1994Dec29.075912.2445@walter.cray.com>
Source record: 114946

Matthew R. Link (mrlink@nickel.ucs.indiana.edu) wrote:
: I just talked to the ARRL today and found the phone number to call the
: FCC to find out your "New" call sign.
: Here goes:
: 1-800-322-1117

: They suggested that you wait about 3 weeks from the time you passed
: your test until the time you call.

: Hope this helps!

: -Matt
: (waiting on ticket!)

: --
: ____
: Matthew R. Link MrLink@indiana.edu | Water is life!
: University Computing Services- Coordinator Campus Wide |
: http://www.cs.indiana.edu/hyplan/mrlink.html | Paddle or Die!

Does this mean that a new ham can start operating without a license in
hand as long as he has the C.S.C.E and knows his call?

Jim. (ARRL and CAVEC VE)

--

Jim Lynch, Sales Analyst, Cray Research, Inc. / ARS: K4GVO
Southeast District, Phone: (404) 631-2254, Email: jwl@cray.com
Suite 270, 200 Westpark Drive, Peachtree City, GA 30269

4008. Re: Where can I get EMI filters for my PC ??

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 14:16:09 UTC
From: mack@ncifcrf.gov
Message-ID: <D1Ksyx.Fpr@ncifcrf.gov>
Source record: 114942
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

In article <Cfb-kClgnY$T073yn@helix.net> gkennedy@helix.net (Geoff L. Kennedy) writes:
> Hi Folks !!
>
> I'm trying to get rid of RF emissions from my PC, and need to find a
> source of plug-on EMI filters (9 pin and 25 pin) for the serial and
> parallel ports....does anyone know WHERE in Canada or the U.S. I can
> buy these goodies ??
>
> I checked with one source here in Vancouver....but the pricing was
> absolutely ridiculous - $25 to $40 U.S. ** EACH ** (!!!!) with a 10
> piece minimum order....surely these things are available in small
> quantities at a more reasonable price.....
>
> Oh, yes, I am interested in supressing radiations near the 2M ham
> band......
>
> Thanks in advance for any ideas !!
>
>
>***
>* Geoff L. Kennedy ** Located on the WE[s]T Coast of *
>* "Kennedy's Space Centre" 8-) ** Beautiful British Columbia ! *
>* E-mail: gkennedy@helix.net ** Coquitlam, BC, Canada *
>***
>

I haven't looked into this much, but I should, since I my 432 antennas
100feet away from the shack can hear my 486 computer quite well.

What about threading your cables through toroids or using
split ring material for clamping over the cables.

There are also flat pieces of ferrite for clampling on flat
cable that I've seen too.

If you fix it, let us know how you did it.

Joe Mack NA3T
mack@ncifcrf.gov

4009. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 14:16:14 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec29.141614.12348@ke4zv.atl.ga.us>
Source record: 114948

In article <1994Dec28.223021.10473@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>
>: Oh, please. Appnotes are about as good as the magazine articles
>: featuring HF QRP rigs. Heathkit is gone. No one gets "insert
>: component lead through hole, solder (1)" anymore. The Motorola
>: evaluation kits come with circuit boards, chips, and detailed
>: part numbers and ordering info for the passive parts. The MC2833
>: 2 meter transmitter kit goes together in under 1/2 hour, and that
>: includes waiting for the soldering iron to heat up.
>
>The magazine articles generally give you all of the component
>values. If not, you can usually get them from the author, who,
>by the way, thought the circuit worked well enough to publish.

So did Motorola, they *are* trying to sell chips. It would be
foolish of them to release evaluation kits that won't work right.

>Even if you have an engineering degree, it isn't always trivial
>to redesign circuits using application specific ICs. Problem
>is the *missing* information. Exactly how does the impedances
>and transfer functions change as you change the frequency?
>What if your desired frequency is outside the suggested range
>of the device?

That's all true, and a good reason for beginners to use designs
recomended by the component manufacturer, and within the design
limits of the parts. The advanced builder can try to push the
envelope if they wish.

>True, an experienced experimenter knows how to tweak stuff on
>the bench till it works. Usually, they build the suggested
>circuit *exactly*, and then build the modified version.
>Lots of beginners don't have time for this, and start off
>with what they think will work best, and never get it going.
>I think designing is like photography, if you design and
>build enough stuff eventually you figure out what works
>and what doesn't (good photographers seem to use lots of
>film).

Well, my experience with motion picture photographers is
that they try to shoot as close to 1:1 as possible, editing
in the camera. Film is expensive. The guys shooting video
are the ones who roll hours and hours of tape for a one
minute bit. Then they have to spend days in post hunting
through the garbage hoping to salvage a rose. :-)

Having a plan can eliminate a lot of spray and pray, and
save a lot of time in post.

Building is often much the same way. If you stick to tried
and true designs, using conservatively rated components,
you can usually get it to work right the first time. If
you're pushing the envelope past the published parameters,
you may need to tinker a bit to get it to work, or back
off and revise your design. The key is to think through
what you want to do before putting solder to copper. That
can save a lot of hair pulling later.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4010. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 14:32:45 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec29.143245.12470@ke4zv.atl.ga.us>
Source record: 114949

In article <1994Dec29.003042.13049@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>How good should homebrew transceivers work?
[delete]
>So, are these standards too high? Should
>publishers merely note projects with
>problems and leave it as an exercise for
>the reader to solve? Or, is it important
>for homebrew projects to sound good on
>the air? After all, a bad transmitter
>can affect a lot of people.

Your name is on it. If you don't want your name to be
Mud, I'd assume you'd try to do a good, non-fussy, easy
to duplicate design. There's a place for "quick hacks",
cheapy shortcuts, and idea pieces, but they should be clearly
labeled as such, and the potential builder cautioned about
pitfalls that may be encountered.

I expect, though I probably expect too much, that a
published project will work as advertised when assembled
with reasonable competence. If I have to redesign it to
make it work properly, I'll have a low opinion of the
author. That's not to say that basic project concepts
have to be complete, or the ultimate in performance.
They can serve as a platform for more refined designs,
but that should be clearly explained up front in the
article.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4011. Re: Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 14:36:13 UTC
From: adams@chuck.dallas.sgi.com
Message-ID: <D1KtwD.ADz@odin.corp.sgi.com>
Source record: 114943
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <3dt6bg$rt3@grape.epix.net>, amsoft@epix.net (Pete deVolpi) writes:
|>
|> > Does anyone have any insight to the quality of the radio kits
|> >produced by Ramsey (sp?) Electronics? Has anyone here built one?
|> >Any comments appreciated, any comments mail to me at
|> >mourning@raven.cybercom.com, doubly so. Thank you!
|>
|> It is very nice to have any company that provides kits for the builder.
|> Ever since Heathkit stopped making kits, its been a big vacumn for builders.
|> Ramsey has a reputable name, a new modern factory, and the latest
|> wave soldering machine.
****
^^^^^^^^^^^^^^^^^^^^^^^^^ Pete, why would you need this for a kit? :-)
|>
|> I also like the S.& S. Electronics kits very-very much.

I might add that the Oak Hills Research Series of Kits, especially the
new Explorer Single-Band CW Xcvr with it's almost Heathkit like instructions
shows that the free market will fill a void where some else gave up or over
priced themselves out of the market. I spent a lot of time and money on
Heath and was very disappointed towards the end when the cost of a kit
rivaled the price of a factor assembled unit. I still bought Heathkit
just to have the joy of working on one.

I still have a SB-104A unassembled in the box that I'm saving for retirement.
:-)

Other kit manufacturers have come and gone and only those with quality and
support will remain for any period of time. The customer's memory is very
good.

dit dit

--
Chuck Adams K5FO CP-60 adams@sgi.com

4012. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:00:08 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec29.150008.12688@ke4zv.atl.ga.us>
Source record: 114952

In article <D1J9zp.Fsy@ncifcrf.gov> mack@ncifcrf.gov (Joe Mack) writes:
>
>Back in the 50's and 60's it was still possible for the motivated ham to build
>their own station. Parts were plentiful and rigs were less complicated than
>today. However since then production of electronic equipt is more automated,
>parts are not available in onesies and twosies and building is only done
>by stalwarts who have access to fairly pricey test equipment. Doesn't mean
>you can't still have fun in your basement, but building a rig you can buy
>for $500 will be a multiyear project for the average person. Start with
>something more modest.

I disagree with part of this. Building is easier today than ever before.
Complete subsystems are now available on single chips. Projects that
were too complex to tackle in the 50s or 60s are now merely a matter of
playing connect the dots with subsystem ICs. While the corner TV repair
shop doesn't have all the parts you need today, there are good suppliers
out there with 800 numbers who do. Digi-Key is one, but there are many
others. With MMICs, packaged balanced mixers, packaged LO modules, complete
IF systems on a chip, etc, you can easily build equipment today that even
the advanced amateur wouldn't have attempted in the 1950s.

Good test equipment is important, and it was in the 50s too, too bad
most builders then didn't have any, or their projects would have worked
much better than they did. But the most important piece of test equipment
is between your ears. All the test equipment in the world is of no value
if you don't understand what it's telling you about your circuit, and what
that means to performance. Used/surplus signal generators and spectrum
analyzers abound at good prices if you don't mind stuff that takes a
19 inch rack to hold and that weighs 50-70 pounds. You do have to know
how to interpret what those instruments are telling you, however, they
don't have microprocessors to figure everything out for you and present
it in graphical form, IE don't expect point and click.

> Ham radio is not a cheap hobby. Still rigs 10-15yrs old will
>do most of what today's rigs do, but at half the price.

Ham radio need not be an expensive endeavor, unless you're really
into Gameboy features. Solid RF performance isn't that hard to
achieve in homebuilt equipment, and the surplus scene is overflowing
with ex-commerical stuff just begging to be converted to amateur
use. You can have a very competent VHF or UHF radio for under $50
that will put most of the Gameboy machines to shame in high RF
environments. The radio will have a name like GE or Motorola on
the front of it.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4013. Re: Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:06:09 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec29.150609.12783@ke4zv.atl.ga.us>
Source record: 114945

In article <1994Dec28.183421.25527@gov.nt.ca> geret@gov.nt.ca (Larry Horlick,Iqaluit,9795366,) writes:
>Does anyone know if heating PC board etching solution (ferric oxide, I think)
>will make the etching process faster? Is there an optimum temperature? Can
>the used solution be restored by reversing the process?

Yes, heating the solution will hasten it's action at the rate of a 2 times doubling for every 10 C temperature rise. To get consistent results, it's important to maintain the solution at a fixed temperature. One common trick is to use a double boiler design with the etchant tank in a hot water bath. A good temperature to shoot for is 120 F. You can maintain that with a flow of hot water from the tap. That'll give quicker and cleaner etching, with less undercutting, than you'll get with room temperature solutions. Agitation is helpful too, a bubbler from an aquarium can give quicker and more uniform results than just allowing the board to lie in the solution.

I don't know of any practical way to regenerate Ferric chloride etchant. Since it's cheap, just replace as needed.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4014. HAMCOMM AND PACTOR.. .. HELP PLEASE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:16:46 UTC
From: desaid@muvms6.wvnet.edu
Message-ID: <1994Dec29.111646.3434@muvms6>
Source record: 114868

HELLO ALL:

I HAVE SUCCESSFULLY MADE HAMCOMM INTERFACE AND I USE IT FOR CW, RTTY AND
AMTOR. I WOULD LIKE TO KNOW WHETHER THIS INTERFACE CAN BE USED FOR
PACTOR. IF SO, WHAT SOFTWARE I SHOULD BE USING TO DO PACTOR.
I WOULD REALLY APPRECIATE IF SOMEONE POINT ME TO THE SOURCE OF
SOFTWARE OR OTHER ALTERNATIVES FOR PACTOR.

THANK YOU VERY MUCH.

73
DINAKAR KB8VHC
DESAID@MARSHALL.EDU

4015. Re: Looking for Tower plans

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:44:04 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec29.154404.13013@ke4zv.atl.ga.us>
Source record: 114954

In article <3dsfuq$do9@bcfreenet.seflin.lib.fl.us> k8unp@bcfreenet.seflin.lib.fl.us (Peter Rimmel) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: Used towers can also be a safety hazard. Rohn warns against using
>: used towers. This is more than just liability lawyer blather, and
>: more than just a marketing ploy (though it is that too). You don't
>: know what kind of stresses a used tower may have endured before you
>: got it, and you don't know what hidden corrosion problems it may
>: have. There are testing companies that can determine if the tower
>: sections are still sound, but the cost of that testing may be more
>: than what you save by buying the used tower. (There are ways to
>: test tower sections yourself, and that can be viable if you're
>: willing to shoulder the extra liability. I posted an explanation
>: of how to do that a few months ago.)
>
>: If you are an experienced structural engineer, and if you are an
>: ASME certified welder, you could perhaps make your own tower to
>: a standard that would be as safe as commercial towers. But if you
>: are the typical jackleg tinkerer, you'll likely be making an accident
>: waiting to happen. Remember that you, or some innocent passerby,
>: can be killed by a failing tower.
>
>: If we throw out the idea of making a climbable tower, there are
>: plans in the ARRL Handbook for making a 40 foot wooden A frame
>: antenna mast. Properly guyed, it's reasonably safe as long as
>: you keep an eye out for rot and termites.
>
>Some of what Gary sez is true... You should inspect any used tower
>sections you get for cracked welds and stress... BUT...

Some! Why every word is gospel. :-)

You're durn toot'n that used tower sections should be inspected, and
not just with the naked eye either. Hidden corrosion, cracks and flaws,
and warpage are real concerns with used tower. Again I'd refer you to
my post of several months ago about using magnaflux or Dyechem methods
for detecting hidden cracks, and for ways to detect hidden corrosion
and warpage. Just because a section *looks* sound doesn't mean that
it is. I've found *brand new* sections that were defective. Inspect
every section before erecting it.

>I have put up 30-40 towers in Florida, mostly old Rohn 25 which came off
>commercial sites, and our club sold for club funds to the hams where
>they were installed...

That's a mighty small sampling. Come back when you've installed several thousand used sections. Things you get away with doing 9 times out of 10, or even 99 times out of 100, can rise up and bite you on the butt when you least expect it.

>I have yet to hear that any one of them had a problem or came down... and
>this is through two hurricanes!

Used tower can be a good buy, and safe too, but unless you inspect it properly, and install it correctly, you can be opening yourself up to a serious structural failure, and a heavy liability suit that your insurance won't touch. Learn to do it right, or leave it to bonded professionals. This country is too sue happy to do otherwise.

>Used tower sections are usually galvanized and strucutrally wsound...

The corrosion is almost always hidden, inside the legs where moisture gets trapped. Galvanizing is a *sacrificial* process. The zinc corrodes away to protect the base metal. Used tower almost always has lost a good bit of its original galvanize. It's often worthwhile to have it re-dipped before installing it. Hidden cracks and flaws are typically, but not always, at the leg joints where the metal has been abraded and where stresses are high, or where the Z braces attach to the tower legs. Twisting stresses can weaken these welds. They may *look* sound, but may fail under tension.

Gary
--
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534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4016. Are single-chip ICs for RF Xmitter/Reveiver available?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:52:46 UTC
From: c23mkb@kocrsv01.delcoelect.com
Message-ID: <3dum0e$fu8@kocrsv08.delcoelect.com>
Source record: 114947
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,sci.electronics

Hello People!

Can anybody please let me know as to if there is a single chip IC available for RF Transmitter and RF Receivers?

I would be greatful to anybody who can provide me with the IC number, manufacturer and other pointers such as frquency range, etc....

Hoping to get some quick responses.

Thank You

Mahesh Bagade

4017. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 15:56:16 UTC
From: zlau@arrl.org
Message-ID: <1994Dec29.155616.1389@arrl.org>
Source record: 114951

KE4ZV Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Building is often much the same way. If you stick to tried
: and true designs, using conservatively rated components,
: you can usually get it to work right the first time. If
: you're pushing the envelope past the published parameters,
: you may need to tinker a bit to get it to work, or back
: off and revise your design. The key is to think through
: what you want to do before putting solder to copper. That
: can save a lot of hair pulling later.

My point exactly. If you read my post carefully,
the only *exclusion* I made was for application
notes that described non-amateur designs--since those
would require the builder to come up with a modified
design (which is obviously not tried and true).

I've been sort of puzzled--why haven't we seen a lot
of 2 meter FM transceiver designs if it as easy as
Gary says it is? Admittedly, I find it more fun to
work on high performance microwave gear, but I know
this doesn't apply to most of the amateur community.
After all, you don't have to pass a morse code test
to design, build, and write up nifty projects :-).
--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

4018. Re: Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 18:44:08 UTC
From: raateland@vyh.fi
Message-ID: <1994Dec29.184408@vyh.fi>
Source record: 114950

>>will make the etching process faster? Is there an optimum temperature? Can
>>the used solution be restored by reversing the process?
>

I recall reading a detailed article in the Dutch RA magazine Electron
a number of years back in which the author explained what happens to
the FeCl3 solution during the etching of PC boards.

The conclusion was that one can very well use and re-use the solution
provided an acid solution (HCl, Hydrogen chloride would be suitable)
is added to keep the pH (acidity) of the etchant down. Eventually
precipitate will accumulate and limit the useful life of the etchant.

I'm sorry that I don't remember details. My wife made me throw away
the collection of old RA magazines that had accumulated during an
earlier active hamming period. I don't think I tore out this
particular article.

I suppose you could measure the pH of a fresh solution of FeCl3 with
litmus paper or something better and adjust the pH to that level by
adding some acid when the pH has gone up more than one unit.

Don't spill acid on clothes or skin and don't breathe the fumes. To
avoid accidents get the advice and/or assistance of somebody who is
familiar with chemistry.

Good luck.

--
Arjen Raateland, SAS User Support
Water and Environment Research Institute,
National Board of Waters & the Environment
Helsinki, Finland

4019. Parts & kits 1/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.711.546@acenet.com>
Source record: 114956

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

+-={ MEGALIST }=-+ by AF4K
Names and addresses of companies that supply kits, parts and equipment
for amateur radio: (Updated 28 December, 1994)

"624 Kits" (803) 579-6262 day / 583-1304 eve.
171 Springlake Drive
Spartanburg, SC 29302 (QRP kits & accessories)

8 Radio Products (216) 946-6889
6198 Marlo Drive
Painesville, OH 44077 Roof top towers, masts, accessories

A & A Engineering (714) 952-2114
2521 W. La Palma #K Stas Andrzejewski, W6UCM (Keyer,
Anaheim, CA 92801 Battery charger, SELCALL, freq synth kits etc.)

A.B.C Electronics 800-562-6503 206-364-8300
1750 15th N.E. Only New Icom Ham Radio on special order. No stock
Seattle Wa 98155 Towers, Antenna's, Coax and Coax fittings.In stock

Ace Systems (814) 965-5937
Rd. 1 Box 83
Wilcox, PA 15870 Opto Keyer

Active Electronics (800) 677-8899 FAX: (514) 697-8112
11 Cummings Park (INT.) (514) 630-7410
Woburn, MA 01801 New electronic parts

ADI Co. (800) 233-6261
180 Michael Drive
Syosset, NY 11791 Power supplies, batteries etc.

Charles P. Adkins N8QXP 1821 La Blanc. Lincoln Park,MI 48146
(313) 382-0272 Tubes

Advanced Computer Products Inc. (800) FONE-ACP FAX: (714) 558-8849
1310 E. Edinger (714) 558-8813 Voice Sales
Santa Ana, CA 92705 Chips, semiconductors

Alfa Electronics (800) 526-ALFA FAX: (609) 275-9536
P.O. Box 8089 (609) 275-0220
Princeton, NJ 08543 Multimeters etc. Free catalog

All Electronics (800) 826-5432 (orders) FAX: (818) 781-2653
P.O. Box 567 Voice: (818) 904-0524 INFO

Van Nuys, CA 91408 Misc. surplus parts etc. catalog

Allied Electronics: 1-800-433-5700 Located in 37 states, 79 branches.
7410 Pebble Drive Call for nearest branch. Call for Catalog.
Fort Worth, Tx. 76118: Electronic components and tubes.

Alltronics: Main. (408) 943-9773: FAX (408)943-9776: BBS(408)943-0622
2300 Zanker Road Excellent Tube selection at reasonable prices
San Jose, CA 95131 Main Store. Components, grab bags etc. Min $15

Alltronics: Branch Store. (702) 897-7237
6283 S. Industrial Ave. Components, grab bags etc.
Las Vegas Nv.89118

Alltronics: Branch Store. (801) 485-5117
2888 S. Main St. Components, grab bags etc.
Salt Lake City, Ut. 84115

Almac Electronics 800-426-1410
Seattle Wa Solid-state componets

American Science and Surplus (formerly JerryCo)
P.O. Box 48838 (708) 475-8440 FAX: (708) 864-1589
Niles IL 60714-0838 ### New address.
Surplus. *The* surplus place. Lots and lots of surplus.
You name it, they have it. Catalogs are really good.
$12.50 minimum order (which includes the $4 shipping charge).

Amidon Associates (213) 763-5770
12033 Otsego Street
North Hollywood, CA 91607 (toroid cores, ferrite beads etc.)

Antennas West (800) 926-7373
Box 50062S
Provo, UT 84605 Wide variety of antenna kits, loops etc.

Antique Audio (512) 467-0304
5555 N. Lamar, Bldg. H-105
Austin, TX 78751 Tubes, parts, books, kits

Antique Electronic Supply Co. (602) 820-5411
6221 S. Maple Avenue
Tempe, AZ 85283 (Tubes & other components)

Antique Radio Classified (508) 371-0512 Write for free sample.
P.O. Box 802 (or is it Box 2?) Magazine. You'll find almost ANYTHING here
Carlisle, MA 01741 for older radios, obscure parts, tubes etc.

Appleseed Electronics Inc. (219) 489-9802
P.O. Box 8228
Fort Wayne, IN 46898 Parts

ARE Communications Ltd. 44-081-997-4476
6 Royal Parade

Hanger Lane, Ealing HF kit for ICOM R-7100 to 200 kHz !
London W5A 1ET & SSB kits for Icom R-100 and R1.

Arlen Supply Company (610) 352-9311 / -9388 = FAX
7409 W. Chester Pike
Upper Darby, PA 19082 Tubes. 1 million stocked. Minimum $150.00!

Arlington Electronic Wholesaler
Lee Highway
Arlington, VA Electronic parts

Arrow Electronics Inc. (800) 93-ARROW
1860 Smithtown Avenue Catalogs c/o 25 Hub Drive
Ronkonkoma, NY 11779 Melville, NY 11747
Minimum $25.00 Components distributor.

>>> Continued to next message

• SLMR 2.1a • Refuse novocaine - transcend dental medication!

4020. Parts & kits 2/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.712.546@acenet.com>
Source record: 114957

>>> Continued from previous message
ARRL
225 Main Stret
Newington, CT 06111 (QRP Books, QST Magazine etc.)

A.R.S. Need address Arizona
(602) 820-5411 Tubes

David Ask No phone number given
RR 2
Houston, MN 55943 Tubes 4, 5 and 6 pin tubes. Send $1 for list

Jeff Bauman WB5KZW 6647 Stonebridge East,West Bloomfield, MI 48322
(313)-435-9922 (313)-661-0202 Jeff had 1500 tubes for sale as of
December,1993

Baytronics No phone number given
P.O. Box 591
Sandusky, OH 44870 R-390A receivers, parts, military surplus

BCD Electro (214) 343-1770
P.O. Box 830119
Richardson, TX 75083 Catalog, parts, etc.

Bigelow Electronics No number listed
P.O. Box 125
Bluffton, OH 45817 Parts, Catalog $2. Flyer 1 stamp

Bomar Crystals (201) 356-7787
201 Blackford Avenue (800) 526-3935
Middlesex, NJ 08846 Crystals, TCXOs etc.
Might be out of business (was OK in 1985)

Ron Borland, W4YBF No phone number given
1165 Ashley Loop
Reidsville, NC 27320 Fuses, grab bag of 50 for $2.00

Brian E. Brachel, KA8HLI
P.O. Box 71684 Cordless Phone Patch kit $30.00
Madison Heights, MI 48071-0684 See QST March 1988

Brigar Electronics (607) 723-3111 FAX: (607) 723-5202
7-9 Alice Street
Binghampton, NY 13904 Parts, gadgets $30 min.

Mel Brooks, K5DJB No phone number given
932 Macklyn Lane
Bartlesville, OK 74006 Tubes, parts, schematics (incl. antique)

Byers Chassis Kits (717) 292-4901
Charles Byers, K3IWK
5120 Harmony Grove Rd.
Dover, PA 17315 (Chassis & cabinet kits. s.a.s.e. please)

C & N Electronics (800) 421-9397 / (612) 429-9397
6104 Egg Lake Road FAX # (612) 429-0292
Hugo, MN 55038 Buy & sell tubes

C & S Electronics (203) 866-3208
P.O. Box 2142
Norwalk, CT 06852-2142 Specialty RF chips etc.

C & S sales inc (800) 292-7711
1245 Rosewood ave
Deerfield Il 60015 Test gear, kits, $35 rcvr for 2m/6m etc.

Calrad Corp. (213) 465-2131
819, N. Highland Avenue
Los Angeles, CA 90038 Audio parts, transformers etc.

John Cable Address needed (619) 258-7931
Tubes from 1941 to 1960, new.

Capitol Radio (301) 840-5700
45 West Watkins Mill Rd Catalog available
Gaithersburg, MD 20877 New electronic parts, tools, test equip.

CeCo Communications (212) 646-6300
2115 Avenue X
Brooklyn, NY 11235 (Vacuum tubes)

Circuit Board Specialists June 1993 Mailed returned, no forwarding address
P.O. Box 969
Pueblo, CO 81002 (Various kits & projects, P.C. boards)

Circuit Specialists Inc. (800) 528-1417
Box 3047
Scottsdale, AZ 85271 Electronic components incl. RF parts

Circuitwerkes Co. (904) 331-5999
No address FAX: (904) 331-6999
DTMF decoders etc.

Coilcraft (708) 639-2361 / (708) 639-6400
1102 Silver Lake Road
Cary, Illinois 60013 Coils? Filters? Send for Catalog

Communication Concepts Inc. (513) 426-8600 or (513) 220-9677
508 Millstone Drive (513) 429-3811 = FAX
Xenia, OH 45385 (HF linear amp kits etc.)

CQ RADIO KITS (416) 775-9119
Box 1546
Bradford, ONTARIO

Canada L3Z 2B8 QRP xcvrs, rcvrs, keys etc.

Crystal set society (314) 725-1172
P.O. Box 3026
St. Louis, MO 63130 Handbook, projects, formulas

Crystek Crystals (800) 237-3061
2351/2371 Crystal Drive
Ft. Myers, FL 33907 Quartz Crystals

Curtis Electro Devices (415) 964-3846
Box 4090
Mountain View, CA 94040 Keyer chips etc.
>>> Continued to next message

4021. Parts & kits 3/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.713.546@acenet.com>
Source record: 114958

>>> Continued from previous message

CW Crystals Inexpensive, but SLOW to respond.
570 N. Buffalo Street
Marshfield, MO 65706 (Crystals, $1.00 catalog)

CW Forever Key Co. send stamp for list.
P.O. Box 659
Manchester, MO 63011 Buy & sell keys etc.

Cy-ance Kit, (501) 839-8293
14786 Slate Gap Road
West Fork, AR 72774 80 different kits

Daily Electronics (206) 896-8856 / (800) 346-6667
10914 N.E. 39th Street Fax # (206) 896-5476
Vancouver, WA 98682 Tubes, all types.

Dallas Solar Power (800) 345-4913
P.O. Box 611927
San Jose, CA 95161 Photovoltaics, Solar cells, chargers

Dan's Small Parts And Kits (Formerly KA7QJY Components)
1935 S. 3rd W. #1
Missoula MT 59801
1-406-543-2872 SASE for a current list of parts. RF parts,
(801) 563-5173 (Danny Stevig)

Davilyn Corp. (800) 235-6222 / (818) 787-3334
13406 Saticoy St. FAX: (818) 787-4732
North Hollywood, CA 91605-3475 Surplus electronic gear, incl. Collins.

DC Electronics (800) 423-0070 / (602) 945-7736
P.O. Box 3203 FAX: (602) 994-1707
Scottsdale, AZ 85271 Components. Many ICs.

Debco Electronics (800) 423-4499
4025 Edwards Road
Cincinatti, OH 45209 Components, especially chips etc.

DH Distributors (316) 684-0050
P.O. Box 48623
Wichita, KS 67201 Tubes, radio, TV, industrial

Digi-key (800) 344-4539
701 Brooks Avenue S. or 1-800-DIGI-KEY
P.O. Box 677
Thief River Falls, MN 56701 Parts

Ditek Industries (800) 762-9328
*** NEED ADDRESS ***
(CW paddles, keyers etc.)

Down East Microwave (207) 948-3741
RR 1 Box 2310 (207) 948-5157 = FAX
Troy, ME 04987-9721 Transverters, pre-amps, antennas etc.

DWM Enterprises (No number listed)
1709 N. West Avenue #103
Jackson, MI 49202 (Mobile SW converter & simple QRP plans)

DX Radio Supply (610) 273-7823
Box 360 Call or write for catalog
Wagontown, PA 19376 Kit retailer. Ramsey, etc.

Eidson Crystal Company (No number listed)
Address needed Mr. Merill Eidson
Temple, TX Crystals for older rigs.

ELECTRIC RADIO
AM International publishes a column in ELECTRIC RADIO magazine, which is
probably the best source for articles on vintage amateur radio and AM.
A subscription is $28/year from ER, P.O. Box 57, Hesperus, CO 81326.

Electrogadgets Inc.
P.O. Box 2065
Morris Township, NJ 07962 Digital voice recorder kits $20.00

Electron Tube Enterprises (802) 879-0611
Box 311
Essex, VT 05451 Tubes

Electronics Exchange (314) 426-3056
No address given
St. Louis, MO Electronics suurplus. Call for catalog.

Electronic Goldmine (602) 451-7454
P.O. Box 5408
Scottsdale, AZ 85261 Kits, parts etc.

Electronic Rainbow (317) 291-7262 / -7269 = FAX
6254 LaPas Trail
Indianapolis, IN 46268 Various electronics kits

Electronic Switch Co. (404) 518-4634
4343 Shallowford Road, Suite E-6
Marietta, GA 30062 Co-axial switches etc.

Elktronics Northeast Co. (603) 525-4001
Rt. 1 Box 789
Hancock, NH 03449 VFO kit, RF amp, filters etc.)

William Erickson, W4UIL No phone number given
3905 Cherrywood Lane

Annandale, VA 22003-1901 Tubes, older radios etc.

E.S.R.C. (407) 735-3397
P.O. Box 1192
Delray Beach, FL 33447-1192 Buy, sell, swap tubes of all kinds

Fair Radio Sales (419) 227-6573
1016 E. Eureka (419) 223-2196 FAX: (419) 227-1313
Box 1105 Parts, transformers, power supplies,
Lima, OH 45802 Surplus and gov't surplus radios etc.

>>> Continued to next message

� SLMR 2.1a � Refuse novocaine - transcend dental medication!

4022. Parts & kits 4/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.714.546@acenet.com>
Source record: 114959

>>> Continued from previous message
Fala Electronics (No number listed) send s.a.s.e.
P.O. Box 1376-1
Milwaukee, WI 53201 Vacuum tubes

Falkner Enterprises of America Inc.
312 River Street (319) 687-2479
Sabula, IA 52070 Batteries, electronic parts, catalog

FAR Circuits (N9ATW) (No number listed)
18 N 640 Field Court
Dundee, IL 60118 (P.C. boards etc.)

Fordham Radio SUpply (800) 695-4848
260 Motor Parkway
Hauppauge, NY 11788 Tools and test equipment

Robert Fowle (517) 789-6721
1215 Winifred Street Buy/sell vintage gear, NOS parts, manuals
Jackson, MI 49202-1946 Hammarlund parts, numerous others too

Frequency Sources Semiconductor Division Catalog
Need address (617) 256-8101 PIN diodes

R.M. Fuller Co. (800) 626-6662
902 Industry Drive
Seattle, WA 98188 DTMF decoder chips & info.

Gateway Electronics (800) 669-5810 Orders
8123 Page Blvd. (314) 427-6116
St. Louis, MO 63130 Parts, gadgets $10 min.

G4ZPY Paddle Keys no number listed
c/o Charles Tryor, N4LMY
7809, 10th Avenue S.
Birmingham, AL 35206 Various keys

Glass Audio Magazine (603) 924-9464 / -9467 = FAX
P.O. Box 176 Bi-monthly $20/year
Peterborough, NH 03458-0176 Designs for tube equipment

Richard Gray, WA6LRR (619) 977-6033 / 390-8937 = FAX
11869 Hi Ridge Road
Lakeside, CA 92123 Buy & sell old radio gear,parts (pre 1940)

H & R Company (800) 848-8001 / (215) 788-5583
(Herbach and Rademan) FAX: (215) 788-9577
18 Canal Street, P.O.Box 122

Bristol PA 19007-0122 Tools, parts etc. Min. $25 Free catalog

The Ham Key Co. (800) 527-0807
Division of Ham Radio Center Inc.
8342 Olive Boulevard
St. Louis, MO 63132 (Paddles, keyers, SWR meters etc.)

Hambrew Magazine 1-800-5-HAM-RIG
c/o George De Grazio, WF0K
P.O. Box 260083 Quarterly Magazine for builders $10/year
Lakewood, CO 80226 HF, QRP, VHF, XMTRS, RCVRS, QRO, ANTENNAS

Hamtronics, Inc. (716) 392-9430 / - 9420 = FAX
65 Moul Road 10m, 6m, 4m, 2m, 220
Hilton, NY 14468-9535 Receiver kits, receivers, converters

Heathkit Co. (800) 253-0570
Address needed
Benton Harbor, MI Some parts & manuals still available

Heil Company, LTD. (618) 295-3000
2 Heil Drive (618) 295-3030 = FAX
Marissa, IL 62257 Microphones & other ham gadgets

Melvin Heineken, K5MNJ No phone number given
2204 Spruce Needle Rd. N.E.
Rio Rancho, NM 87124-6308 Tubes. New unboxed. Other parts.

Hosfelt Electronics (800) 524-6464
2700 Sunset Blvd. FAX: (614) 264-5414
Steubenville OH 43952 No minimum. Surplus electronics.

C.M. Howes Communications (44) 327-60178
Eydon, Daventry,
Northants NN11 6PT
England QRP transmitters, receivers, misc. Also
sold by Townsend Electronics in the U.S.

HSC Electronic Supply (Halted Specialties Co.) (800) 442-5833 orders
3500 Ryder Street (408) 732-1573
Santa Clara, CA 95051 Surplus (new) electronics new and used test
equipment. Min order $10 ($2 handling charge under $20), plus UPS

Heathkit 800-253-0570
Benton Harbor, MI
Old Heathkit replacement parts until depleted plus schematics and
manual copies for some of the old Heathkits. Call with model # and or
part number. They may still have it.

Henry Radio Co. (310) 820-1234
2050 S. Bundy Drive
Los Angeles, CA 90025 New tubes, amplifiers etc.

Idiom Press (No phone given)
Box 1025
Geyserville, CA 95441 Computer controlled keyer kit

Index Laboratories (206) 851-5725
9318 Randall Drive N.W.
Gig Harbor, WA 98332 The QRP Plus SSB/CW transceiver 160-10m

Insensitronics in Wisconsin (800) 382-4155
Address needed
Select A tenna for $49.95, postpaid

International Components Corp.(800) 325-0101
1803 NW Lincoln Way FAX: (503) 336-4400
Toledo, OR 97391 Cabinets, components

International Components Corp.(800) 645-9154
105 Maxess Rd. (516) 293-1500 FAX: (516) 293-4983
Melville, NY 11747 Tubes TELEX: 221576

>>> Continued to next message

4023. Parts & kits 5/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.715.546@acenet.com>
Source record: 114960

>>> Continued from previous message
International Crystal Mfg Co. (405) 236-3741 / (800) 426-9825
10 North Lee Street FAX: (800) 322-9426 / (405) 235-1904
Oklahoma City, OK 73102
701 W. Sheridan
PO Box 26330
Oklahoma City OK 73126-0330 Crystals.

International Radio & Computer Inc.
3804 South U.S. 1 (407) 489-5609 / (305) 879-6868
Ft. Pierce, FL 34982 FAX: (407) 464-6386
Crystal filters. Icom & Kenwood newsletters. Catalog $1.00

Jade Products Inc. (603) 329-6995 / (800) JADE-PRO
P.O. Box 368 (800) 523-3776
East Hampstead, NH 03826 Keyers, J-pole ant. kits 6m, 2m, 220

J & S Radio Sales (203) 456-2667
Address Needed!
Anytown, CT G.E. & Motorola surplus radios

Jameco Electronics (800) 831-4242 / (415) 592-8097
1355 Shoreway Road FAX: (800) 237-6948
Belmont, CA 94002 Electronic components $30 min. order

JAN Crystals (813) 936-2397
2341 Crystal Drive, (800) JAN-XTAL / (800) 529-9825
P.O. Box 06017 (or 60017?) FAX: (813) 936-3750
Ft. Myers, FL 33906-6017 Crystals

J Comm (716) 924-0422
793 Canning Parkway FAX (716) 924-4555
Victor, NY 14564 (QRP HT rigs for 80 - 6m, $350.00)
Computer interfaces etc.

Javanco (615) 244-4444 FAX: (615) 244-4446
501, 12th Avenue S. Orders (800) 528-2626 BBS: 244-4445
Nashville, TN 37203 (Surplus parts etc.)

JDG Co. No phone number given
P.O. Box 20809
Raleigh, NC 27619 Capacitors etc. catalog offered

JDR Micro Devices (800) 538-5000 / 5001
2233 Branham Lane
San Jose, CA 95124 Computers and components
Fax Order: 800-538-5005

BBS: 408-494-1430

Johnson Shop Products (408) 257-8614 FAX: (408) 253-6288
P.O. Box 160113 Catalog $1 or two stamps
Cupertino, CA 95016 New & some used electronic parts

Jolida Tube Factory (800) 783-2555
10820 Guilford Road
Annapolis Junction, MD 20701 Vacuum tubes

Kanga US (419) 423-5643
3521 Spring Lake Drive Biggest & best catalog of QRP kits!
Findlay, OH 45840 QRP kits, projects etc.

KB5QOH (No name given) No phone number given
667 Nine Mile Hill Road
Fairbanks, AK 99712 Tubes, parts, used amateur gear

KD4YBC No phone number given
197 Chickasaw Lane
Myrtle Beach, SC 29577 HF linear amplifier kits, 14V DC

Kilo-Tec (805) 646-9645
P.O. Box 10 (or 1001?)
Oakview, CA 93022 (H.V. Variable capacitors)

Kirby No number listed
298 W. Carmel Drive
Carmel, IN 46032 Tubes, new up to 90% off

Cliff Kurtz, N6ZU No phone number given
6727 N. Pershing Avenue
Stockton, CA 95207-2522 Tubes. Minimum order $10.00

S. LaRose Co. (910) 621-1936
3223 Yanceyville St. Telechron clock movements ($8.00)
Greensboro, NC 27420 for old Hammarlund receivers etc.

Less Buster's Electronics (702) 642-0325
2039 Civic Center Dr. #176N
N. Las Vegas, NV 89030 Inverters, gadgets, parts, free catalog

Marlin P. Jones & Assoc. (407) 848-8236
P.O. Box 12685 FAX: (407) 844-8764
Lake Park FL 33403-0685 Surplus No min ($1 fee for under $10)

Kelvin Electronics (800) 645-9212 / (516) 349-7620
7 Fairchild Avenue FAX: (516) 349-7830
Plainview, NY 11803 Parts, tools, robotics $20 min.

K2AW's Silicon Alley (516) 334-7024
175 Friends Lane
Westbury NY 11590
Free catalog, $10 minimum order. Semiconductors, in particular

KD4YBC No phone number given
197 Chicasaw Lane
Myrtle Beach, SC 29577 H.F. amplifier kits

KA7QJY COMPONENTS (801) 563-5173 (Danny Stevig)
Box 3893
Logan, UT 84323 (Parts)

K8XF Import Key Co. (No number listed)
9929 Fox Squirrel
Newport Richey, FL 34654 Keys, paddles etc.

John Langner WB2OSZ (508) 256-6907
115 Stedman St.
Chelmsford, MA 01824-1823
Slow Scan Television for IBM PC.

>>> Continued to next message

• SLMR 2.1a • Refuse novocaine - transcend dental medication!

4024. Parts & kits 6/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.716.546@acenet.com>
Source record: 114961

>>> Continued from previous message
Lake Electronics (44) 0602-382509 (Alan G4DVW)
7 Middleton Close
Nuthall
Nottingham NG16 1BX
England QRP kits, receivers, accessories etc.

Robert Lang AA2EO (212) 877-0980
120 W. 70th Street Apt. 7-A
New York, NY 10023 Tubes, vacuum variables, xfmrs etc.

Lectrokit No telephone [FAST response!]
401 W. Bogart Rd.
Sandusky, OH 44870 (QRP Transceiver kits, P.C. boards etc.)

Madison Electronics (800) 231-3057 FAX: (713) 729-4766
12310 Zavalla Street (713) 729-7300
Houston, TX 77085 Tubes, capacitors, meters, keys, accys.

Maplin Electronics Ltd. 011-44-702-554161 / 556001 Tech
P.O. Box 3 FAX: 011-44-702-553935
Rayleigh, Essex Catalog L5.50 or L10.65 air
England SS6 8LR Hobbyist supplier

Marden Electronics (800) 222-6093
Address needed
---------- Crystals

Marymac (800) 231-3680 / (713) 392-0747
22511 Katy Freeway FAX: (713) 574-4567
Houston, TX 77450 (Discounts on all Radio Shack parts & products)

Rex Mason (704) 392-0359
100 Honeywood Avenue
Charlotte, NC 28216 Tubes, antique parts, amateur, TV, VCR

Mel (no last name given) No phone number given
34 Hilldale Road
West Hartford, CT 06117 Parts, grab bags etc.

Mendelson Electronics (800) 344-4465
340 East First St. (513) 461-3525
Dayton, OH 45402 Metal cases, surplus parts & equipment

Mercury Systems (609) 596-3304
15 Lakeside Dr.
Marlton, NJ 08053 ARRL kits.

Metal & Cable Corp. (216) 425-8455 425-3504 = FAX
9241 Ravenna Road Aluminum tubing, metal parts, magnetic
Twinsburg, OH 44087 antenna mounts etc.

MCM Electronics (800) 543-4330 or (800) 824-TECH
650 Congress Park Drive FAX: (513) 434-6959
Centerville, OH 45459 Minimum $20 Parts, TV/VCR parts etc.

Don Merz, N3HRT (412) 234-8819
47 Hazel Drive Manuals, mics.,
Pittsburgh, PA 15228 Military surplus & antique radios & parts

MFJ Enterprises (800) 647-1800
Box 494
Mississippi State, MS 39762 (20M QRP transceiver, keyer, transmatch etc.)

Microwave Associates Pin Diode Designers Guide (Catalog)
Need address (617) 272-3000 PIN diodes

Miller-Stephenson Chemical Co.(312) 966-2022
6348 Oakton Street
Morton Grove, IL 60053 Conductive spray coatings

Miltronix Co. No phone number given
P.O. Box 3541
Toledo, OH 43608 R-390A rcvr sales, service & parts etc,

Mini Circuits (212) 934-4500
P.O. Box 166
Brooklyn, NY 11235 (mixers, detectors etc.)

Modular Systems Inc. (205) 880-9998
1304 Toney Dr.
Huntsville, AL 35802 Smart Keyer II

Motorola Inc. (602) 244-3071
MD Z311
5005 East McDowell Road
Phoenix, AZ 85018 Power MOSFETs etc.

Mouser Electronics (800) 992-9943 Call for catalog
2401 Hwy 287 N. (619) 449-2222
Mansfield, TX 76063 (Components - mostly digital, incl. curtis
keyer chips)

MTM Electronics Ltd. (303) 223-7361
2050 Airway Avenue
Fort Collins, CO 80524 Military surplus radios, test equip.

N5LFE @ N5AUX (817) 465-9517
Mark
No address given
Arlington, TX Has a number of tubes to sell

Newark Electronics (800) 281-4320 (312) 784-5100
4801 N. Ravenswood Avenue Large catalog available,
Chicago, IL 60640-9944 Components, new (not geared to hobbyists)

New Sensor Corp. (212) 529-0466 FAX: (212) 529-0486
133 Fifth Avenue (800) 633-5477
New York, NY 10003 Vacuum tubes galore!

No name (SHY?!) No number listed
47 Hazel Drive
Pittsburgh, PA 15228 Large SASE for list of tubes

No name! (SHY?!) (609) 886-8711
No address listed
Need address G.E. Progress line parts, strips etc.

>>> Continued to next message

• SLMR 2.1a • Refuse novocaine - transcend dental medication!

4025. Parts & kits 7/7

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.717.546@acenet.com>
Source record: 114962

>>> Continued from previous message
No name (SHY?!) No phone number given
5150 Merritt Road
Black Hawk, SD 57718 Tubes. S.A.S.E. for list

NOR-CAL QRP Club (916) 487-3580
c/o WA6GER @ KM6PX
3241 Eastwood Rd., QRPp magazine, NOR-CAL40, Sierra kit
Sacramento, CA 95821 Other nifty QRP kits & projects

Norcon Engineering (919) 791-7600
P.O. Box 4042
Wilmington, NC 28406 Touchtone DTMF decoder kits etc.

North Country Radio (518) 854-9280
PO Box 53, Wykagyl Station,
New Rochelle, NY 10804-0053 ATV kits.

Novatech Instruments Inc. (206) 328-6902
1530 Eastlake Avenue East (206) 328-6904 = FAX
Seattle, WA 98102 Direct DIgital Synthesizer kit 2Hz-12MHz

Nuts & Volts (800) 783-4624
Address needed
Circuits and also many surplus advertisers.

Oak Hills Research (800) 842-3748 / (616) 796-1460 = Orders
Dick Witzke KE8KL (616) 796-0920 = Tech info.
20879 Madison Street (616) 796-6633 = FAX
Big Rapids, MI 49307 (20 & 40M CW QRP transceivers etc.)

Oatley ELectronics No phone number given
5 Landsdowne Parade
Oatley, Sydney,
New South Wales 2223
Australia Kits, parts, etc.

Ocean State Electronics (401) 596-3080 FAX: (401) 596-3590
P.O. Box 1458 (800) 866-6626
Westerly, RI 02891 (keys, RF parts, power supplies etc.)

Omega Electronics (919) 266-7373
Bill, K4BWC
Knightdale, NC Repairs & parts for Heath equipment

P.E.M. Tubes (916) 383-9107
7392 French Road

Sacramento, CA 95828 Tubes, radio, TV, transmitting, CRT

Palomar Engineers (619) 747-3343
Box 455 FAX: (619) 747-3346
Escondido CA 92033 Toroid cores and shielding beads etc.

Pan-Com International (No phone listed)
Box 130
Paradise, CA 95967 Send $1 for catalog of 350 kits etc.

Parts Express (800) 338-0531
340 E. First Street
Dayton, OH 45402 Parts, tools, speakers, connectors etc.

Petersen Radio Co. (712) 323-7539
2735 Avenue "A"
Council Bluffs, IA 51501 Crystals

Penntek Electronics (717) 248-2507
14 Peace Dr. Boards, kits etc. including
Lewistown, PA 17044 The Neophyte Receiver, QST Feb 1988

Pervisell Ltd, Call 0494 443033 or Fax 0494 448236.
8 Temple End,
High Wycombe,
Bucks. FAX & RTTY Decoder kit 17 Pounds, UK
HP13 5DR. England

Joseph Pinner No telephone number given
201 Ruthwood Drive
Lafayette, LA 70503 Has several thousand tubes for sale
KC5IJD AOL: JosephWP / Compuserve: 76146,3356 Internet: JosephWP@aol.com

R.J. Portugal Need phone number!
52 Susan Lane Programmable AF/RF
North Haven, CT 06473 Sinewave generator kit 0-10 MHz $65

Pride Tubes (800) 638-3925 (800)456-5642
8200 S. Memorial Parkway (205) 650-5522 FAX: (205) 880-8077
Huntsville, AL 35802 RF Power tubes etc. Pricey

RA Enterprises (408) 986-8286 FAX: (408) 986-1009
2260 De La Cruz Blvd.
Santa Clara, CA 95050 Parts, mil. surplus,

R&D Electronics (800) 642-1123 (tue-fri 9am-4pm sat. 9am-3pm EST)
1224 Prospect Ave. FAX: (216) 621-8628
Cleveland OH 44115 INFO: (216) 621-1121
$10 minimum. Surplus electronics.

R & R Associates (213) 474-1315
3106 Glendon Avenue
Los Angeles, CA 90034
[Richard Rathburn, KB6NQ] "I mainly sell pc boards from QST, Radio

Electronics, etc., and a few of in-house design. I also sell IC's,etc."
Send a SASE every now and then for his most recent flyer & also has boards
for some Motorola Application Notes.

Radio Adventures Corp. (814) 677-7221
P.O. Box 339 FAX: (814) 677-6456
Seneca, PA 16346 W1AW receiver, CMOS CW keyer chips etc.

 SLMR 2.1a Refuse novocaine - transcend dental medication!

4026. Parts & kits(2) 1/3

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.718.546@acenet.com>
Source record: 114963

Newsgroups: rec.radio.amateur.homebrew
From: brian.carling@acenet.com

Continued...

R&D Electronics (800) 642-1123 (tue-fri 9am-4pm sat. 9am-3pm EST)
1224 Prospect Ave. FAX: (216) 621-8628
Cleveland OH 44115 INFO: (216) 621-1121
$10 minimum. Surplus electronics.

R & R Associates (213) 474-1315
3106 Glendon Avenue
Los Angeles, CA 90034
[Richard Rathburn, KB6NQ] "I mainly sell pc boards from QST, Radio
Electronics, etc., and a few of in-house design. I also sell IC's,etc."
Send a SASE every now and then for his most recent flyer & also has boards
for some Motorola Application Notes.

Radio Adventures Corp. (814) 677-7221
P.O. Box 339 FAX: (814) 677-6456
Seneca, PA 16346 W1AW receiver, CMOS CW keyer chips etc.

Radio Bookstore (800) 457-7373
P.O. Box 209
Rindge, NH 03461 As the name suggests!

Radio Devices (508) 480-0502
(Bob Levine KD1GG) Gel Cells, antennas
32 Queens View Road Hamcall CD-ROMs, Ramsey kits etc
Marlboro, MA 01752 checks/MO only, no credit cards.

Radiokit (603) 635-2235 FAX: (603) 635-2943
P.O. Box 973
169 Jeremy Hill Road RF components, variable caps, coils
Pelham, NH 03076 $1 catalog

Radio Works, The (804) 484-0140
P.O. Box 6159
Portsmouth, VA 23703 (Low cost co-axial cable etc.)

Ramsey Electronics (716) 924-4560
793 Canning Parkway FAX: (716) 924-4555
Victor, NY 14564 (RCVR & QRP transmitter, keyer kits etc.)

Lawrence Rauchwerger (217) 352-6195
1610 1/2, W. Union St
Champaign, IL 61821 Tubes. S.A.S.E. list

RC Electronics (503) 862-2641
P.O. Box 367
Murphy, OR 97533 Rare parts etc. 2 stamps for catalog

Kevin Reeves, AA5ZD No number given
2325 Waddy
Dallas, TX 75208 SASE list of amateur & electronic items

RF Parts (619) 744-0700 (0728)
1320 Grand Avenue (800) RF-PARTS or (800) 854-1927 to order.
San Marcos, CA 92069 (RF power transistors & tubes)

Richardson Electronics (708) 208-2200 / (800) 235-2143
40 W. 267 Keflinger Road
La Fox, IL 60147 Tubes, RF parts

R.S. Components (44) 536-201234
P.O. Box 99 (44) 536-405678 = FAX
Corby, Northants Telex: 342512
England Electronic components etc.

The Russian Store (818) 999-1257
7657 Winnetka Avenue
Winnetka, CA 91306 Soviet Field radios etc.

Ryan Communications (412) 368-3859
BOX 111E
Camelot Road (QRP CW transmitter, ready made,)
Portersville, PA 16051 (and transmitter kits, crystals)

SCS No phone number given
P.O. Box 680
New Hartford, CT 06057 Morse keyboard kits

S & S Engineering (301) 416-0661
14102 Brown Road (301) 416-0963 = FAX
Smithsburg, MD 21783 ($270 ARK-4 CW transceiver kit etc.)

SESCOM Inc (800) 634-3457
2100 Ward Dr. FAX: (800) 551-2749
Henderson, NV 89015 RF shielded steel boxes, cases etc.

Skycraft Parts and Surplus Inc. (407) 628-5634 FAX: (407) 647-4831
P.O. Box 536186
Orlando, FL 32853-6186 Surplus parts etc.

Small Parts, Inc. (305) 558-1255 Catalog
13980 NW 58th Court FAX: (800) 423-9009
P.O. Box 4650 (305) 557-8222 Orders
Miami Lakes, FL 33014-0650
+1-305-557-7955 Customer Service (ask for Mirta)
+1-305-557-8004 Custom-made Parts (ask for Ziggy)
+1-305-557-8005 Non-standard Sizes of catalog parts (ask for Eric)
$12 minimum. Mechanical parts, metal stock, Teflon(R) sheets, tools,
wire-size drill bits (as in #61 size for PC board holes).

Small Wonder Labs (203) 667-3536
Dave Benson, NN1G
80 East Robbins Avenue
Newington, CT 06111 QRP transceiver kits for about $50

Dick Smith Electronics (YES!!) (800) 872-1373
c/o American Electronics Walk-in store only!
164 Southpark Blvd. No ham kits. Not much help!
P.O. Box 301
Greenwood, IN 46142 Kits, parts

Southpaw Electronics (800) 851-8870 FAX: (516) 775-5091
P.O. Box 886 Voice (516) 352-7070
New Hyde Park, NY 11040-0311 Parts, min $25. Free catalog (msg for catalog)

>>> Continued to next message

4027. Parts & kits(2) 2/3

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.719.546@acenet.com>
Source record: 114964

>>> Continued from previous message
Spectrum Communications Corp. (610) 631-1710 / -5017 FAX
1055 W. Germantown Pike, S4
Norristown, PA 19403 2m, 220, 440 xmtrs, rcvrs, p.s. etc.

Spy Radios, (Tel: 617) 581-5479 Internet: mc@shore.net
Michael Crestohl KH6KD/W1 Exotic military/government radio equipment
263 Nahant Road, Covert, miniature, "spy" radio sets
Nahant MA 01908-1342 Bought, sold, traded.

Steinmetz Electronics (219) 931-9316
7519 Maplewood Avenue
Hammond, IN 46324 Tubes

Sunset Electronics (No number listed)
12145 Alta Carmel Ct. Suite #250-139
San Diego, CA 92128 ("Build your own ham radio")

Surplus Sales of Nebraska (402) 346-4750 FAX: (402) 346-2939
1502 Jones Street
Omaha, NE 68102 $3.00 catalog (with $3 coupon)

Svetlana Electron Devices Co. (415) 233-0429 / - 0439 = FAX
3000 Alpine Road
Portola Valley, CA 94028 Tubes, RF power etc.

Tactical Electronics Corp. (407) 676-6907
Attn: Lance Lyman, K8IXZ FAX: (407) 951-4630
P.O. Box 1743
Melbourne, FL 32902 Teflon PC boards for VHF/UHF amplifiers.

A.G. Tannenbaum (516) 887-0057 FAX: (516) 599-6523
P.O. Box 110
E. Rockaway, NY 11518 Parts, High voltage capacitors, free catalog

T.A.P.R. Inc. (817) 383-0000
8987-309 E. TANQUE VERDE Rd. # 337
Tucson, AZ 85749 TNC kits for packet radio etc.

Technologic Concepts No phone number given
1803 Mission Street #308 Internet: tlcdhconsult@delphi.com
Santa Cruz, CA 95060 Ramsey FX & Icom 22S conversion kits

Techsonic (610) 834-1978
1642 Butler Pike, Suite 127B
Conshohocken, PA 19428 QRP / QRPp transmitter kits 40,30,20m

Tejas RF Technology (713) 879-9300
P.O.Box 720331 FAX: (713) 879-9494
Houston TX 77272-0331 Tejas Backpacker-II QRP kit etc.

Ten-Tec (615) 453-7172 (800) 833-7373
1185 Dolly Parton Parkway FAX = (615) 428-4483
Sevierville, TN 37862 Great kits, accessories etc.
Internet: 74130.212@compuserve.com Eric Guinn or Gary Barber
$15.00 minimum

Tiare Publications (414) 248-4845
P.O. Box 493W
Lake Geneva, WI 53147 (Books on QRP etc.)

Toronto Surplus & Scientific (416) 490-8865
608 Gordon Baker Road
Willowdale, ONT M2H 3B4 Military radios, test equipment,
Canada Electronics surplus etc.

Townsend Electronics Inc. (219) 594-3661
Box 415 S (219) 594-5580
Pierceton, IN 46562 (Howes HF Kits from England)

MICHELLE TROUTMAN No telephone number given
Internet: "E-mail me for a list: ai495@yfn.ysu.edu"
No address given!
Over 1200 different types of electron and vacuum tubes. These are leftover
stock from a TV/radio repair shop. Most have been tested, either on an
Eico 635 or a Mercury 1100 tube tester. All of them are boxed.

Tucker Surplus Sales (214) 340-0631
1717 Reserve St.
Garland TX 75042
+1-800-527-4642 extension 135 (Left msg req. catalog 12/7/93)
Surplus radio & test equipment

Robert Turner, KD4ADP (813) 960-4291
14826 Daisy Lane
Tampa, FL 33613 Microwave parts, S.A.S.E. for list

Turner Electronics No number listed
16701 Main Street Suite 121
Hesperia, CA 92345 Tubes, capacitors, S.A.S.E. list

Typetronics / Fred Schmidt (305) 583-1340
P.O. Box 8873
Fort Lauderdale, FL 33310

Uni-hat Corp. (800) 807-5646
3816 Royal Lane, Suite 100
Dallas, TX 75229 Not sure what they sell!

Unitrode PIN DIODE DESIGNERS' Handbook & Catalog PD-500C
Need address 1984
(617) 861-6540 PIN diodes

Unity Electronics
P.O. Box 213
Elizabeth, NJ 07206 Vacuum tubes

Velco Electronics (716) 924-2073
Address needed (716) 924-2136 = FAX
Crystals

C. Verderber No phone number given
2266, Route 9G
Rhinebeck, NY 12572 Radios & tubes

Versatel Communications (800) 456-5548
P.O. Box 4012
Casper, WY 82604 Used FM gear, repeaters etc.

>>> Continued to next message

4028. Parts & kits(2) 3/3

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:10:00 UTC
From: brian.carling@acenet.com
Message-ID: <2a6.720.546@acenet.com>
Source record: 114965

>>> Continued from previous message
Vibroplex Co. Inc. (800) AMA-TEUR
98 Elm Street
Portland, ME 04101 (Keys, bugs etc.)

W1FB
Box 250
Luther, MI 49656 QRP CW transmitter kits

W3LOY No phone number given
1942 North Columbus
Lancaster, OH 43130 S.A.S.E. RF parts, filters, mixers etc.

Carl R. Warren, W0KWS (417) 869-4738
MPO Box 567
Springfield, MO 65801 Tubes & parts. Also repair service

Wayne (no last name given) (301) 963-4619
No address given
Gaithersburg, MD Tubes, equipment, parts, books

Westgate Co. (800) 213-4563
Need address! Tubes & transistors

Xandi Electronics (800) 336-7389
P.O. Box 25647
Tempe, AZ 85285 Kits, parts etc.

##
I am amazed at how MANY outfits there are that still cater to home-builders
and QRP operators. Must be a LOT of demand out there! Magazines such as
"73 Amateur Radio Today", QST, Practical Wireless and "Shortwave
Magazine" (England) still publish a lot of good construction articles
for amateur radio. This is NOT an exhaustive list. If you have additions,
send them to me and I'll gladly add them to this list. Most of these
companies will gladly send you a catalogue if you call or write requesting
one. Also, if you find that one or two of these companies are out of
business, PLEASE drop me a message & let me know about it so that I can
delete them!

This list was prepared by AF4K, Brian Carling 28 December, 1994
Please send additional sources for inclusion in this list.
If you go to a hamfest and see someone selling parts or kits,
get a card please and send me their name, address and phone number.

FIDO Netmail ----> 1:109/423
Internet --------> brian.carling@acenet.com

Relaynet (RIME)--> #5365 or ACEONLINE
Packet ----------> AF4K @ W3INK.#MD.USA.NA

4029. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:28:57 UTC
From: mjsilva@ix.netcom.com
Message-ID: <3dv2lp$2af@ixnews1.ix.netcom.com>
Source record: 114966

In <1994Dec29.155616.1389@arrl.org> zlau@arrl.org (Zack Lau KH6CP))

>I've been sort of puzzled--why haven't we seen a lot
>of 2 meter FM transceiver designs if it as easy as
>Gary says it is? Admittedly, I find it more fun to
>work on high performance microwave gear, but I know
>this doesn't apply to most of the amateur community.
>After all, you don't have to pass a morse code test
>to design, build, and write up nifty projects :-).
>--
Yes, this is the question. If one argues that VHF-FM gear is only trivially more complicated to homebrew than HF CW (or HF SSB or FSK, for that matter) gear, how do you explain the enormous difference in the rates of homebrewing of the two animals? I think one of the big differences is that when you're done with your VHF-FM project (including the long wait for your special-order crystals) what you've got is a single channel, rock-bound tranceiver with no PL, DTMF, or any of the other goodies that are regarded as minimal functionality in that world. Maybe 2 meter AM would be a better area to focus on, assuming there were enough other hams to talk to, but then the range drops vs. the local repeaters. I think it all comes down to the dilemma that the Tech bands are much less conducive to rewarding homebrew *by beginners* than is HF, where with similar efforts you can have a rig that will provide countless contacts.

I'm for anything that will encourage hams to try their hand at building some RF gear. What should we be doing to encourage this in the Tech bands? I realize this is getting more into the area of .policy or misc, so maybe that's where it should migrate, assuming anybody else has some comments.

73,
Mike, KK6GM

4030. Re: What's this FB in a 435 MHz GaAsFET Amp?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 19:43:37 UTC
From: zlau@arrl.org
Message-ID: <1994Dec29.194337.6172@arrl.org>
Source record: 114869

moritz@ipers1.e-technik.uni-stuttgart.de wrote:

: NEVER attempt to build one of these older designs, they are often unstable
: and by no means up to todays standards. Modern designs are computer-optimized,
: employ new and affordable devices and noise figures around 0.3 - 0.4
: are feasible. BTW, FB is a ferrite bead and is a doubtful method for
: curing oscillations.

What are the new devices to use? I noticed that Rainer, DJ9BV,
was still advocating the use of the MGF 1302 GaAs FET in the
432 MHz design he published just last year in DUBUS--has he
published a better design? The MGF 1302 is an MGF 1402 in
a cheaper package--I've been using both since around 1987!

BTW, this month's 50 MHz+ column is on newsletters and journals.
See January QST, p. 107 if you want to know more about DUBUS
and other publications.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

4031. Re: Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-29 20:25:36 UTC
From: jcw@kd4dts.radio.org
Message-ID: <1994Dec29.202536.31260@kd4dts.radio.org>
Source record: 114955
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

adams@chuck.dallas.sgi.com (chuck adams) writes:

My experience with Ramset kits have forever turned me off of ever buying any of thier junk again. I bought an FTR-146 (2 meter transceiver) to use as a packet radio. I was missing 4 components, which they sent me. The real problem was that I could never get more than 2 watts out of the radio. This was with a Motorola 2000 Communucations Monitor sitting next to me, borrowed from a friend. I talked to the Ramsey salesperson at the Atlanta Hamfest. He told me that "oh yea, send it in, and we'll tune it up for you. Should be about $10." Well, that sounded real good to me. I later checked with the home office when I was ready to ship it off, and the tune had changed. "Oh, there's no charge if the kit is built correctly, but if it isn't and we have to fix it, it'll be $50.00". Okay. I had been over the damn thing about 20 times, and I knew it was built right. So off it goes in UPS. 4 weeks later (and about 6 phone calls), it's ready. These idiots want to charge me $50.00. "Why?", I ask. "Well, we had to squeeze the coils." "But that doesn't constitute not built correctly.", says I. "Oh, it does, because it wasn't built right, since we had to adjust the coils".

Well, if it wasn't for the fact that I spend $150 (or whatever the going price for the kit was), I would have told them what to do with it. As it was, I paid the the exorted $50 (plus shipping), and have a radio that makes a nice spur emitter.

Never ever ever ever buy Ramsey junk.

>In article <3dt6bg$rt3@grape.epix.net>, amsoft@epix.net (Pete deVolpi) writes:
>|>
>|> > Does anyone have any insight to the quality of the radio kits
>|> >produced by Ramsey (sp?) Electronics? Has anyone here built one?
>|> >Any comments appreciated, any comments mail to me at
>|> >mourning@raven.cybercom.com, doubly so. Thank you!
>|>
>|> It is very nice to have any company that provides kits for the builder.
>|> Ever since Heathkit stopped making kits, its been a big vacumn for builders.
>|> Ramsey has a reputable name, a new modern factory, and the latest
>|> wave soldering machine.
> **********
> ^^^^^^^^^^^^^^^^^^^^^^^^ Pete, why would you need this for a kit? :-)
>|>
>|> I also like the S.& S. Electronics kits very-very much.

>I might add that the Oak Hills Research Series of Kits, especially the
>new Explorer Single-Band CW Xcvr with it's almost Heathkit like instructions
>shows that the free market will fill a void where some else gave up or over

>priced themselves out of the market. I spent a lot of time and money on
>Heath and was very disappointed towards the end when the cost of a kit
>rivaled the price of a factor assembled unit. I still bought Heathkit
>just to have the joy of working on one.

>I still have a SB-104A unassembled in the box that I'm saving for retirement.
>:-)

>Other kit manufacturers have come and gone and only those with quality and
>support will remain for any period of time. The customer's memory is very
>good.

>dit dit

>--
>Chuck Adams K5FO CP-60 adams@sgi.com

4032. Re: Tracking transmitter with a 20-30 mile range needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 06:33:25 UTC
From: ghiscox@netcom.com
Message-ID: <ghiscoxD1M27p.JK1@netcom.com>
Source record: 114872
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

P. Garrison (peg@phoenix.net) wrote:
: I have an immediate need for a transmitter that can broadcast up to
: 30 miles that is simple in design, few components and compact design.
: A single board computer will send a couple of bytes of information thru
: this transmitter. The target landscape that the transmitter will
: have to transmit thru is a flat city landscape with few high buildings.

: The two applications I have planned is a vehicular tracking transmission
: and a weather information beacon that is stationary on ground some
: 30 miles from my home.

Check out a program called APRS (Automatic Packet Reporting System) by
WB4APR. A shareware version of the program is available by anonymous ftp
from ftp.ucsd.edu under the filename APRS62B.ZIP. Remember to use the -d
switch when you pkunzip it. Read through the the extensive .doc files
for an overview of many features.

One of the features you will definitely be interested in is the interface
between the GPS and the Packet radio tnc which allows tracking of mobiles
on a computer map screen.

Good luck, Mr. Bond!

George L. Hiscox	Very funny Scotty...Now
ghiscox@netcom.com	beam down my clothes!!!
WA6RIK @ WB6YMH.#soca.ca.usa.na	^^^^^^^^^^^^^^^^^^^^^^^^

4033. Re: Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 10:08:06 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <788782086snz@lfheller.demon.co.uk>
Source record: 114874

In article <1994Dec28.183421.25527@gov.nt.ca>
geret@gov.nt.ca "Larry Horlick,Iqaluit,9795366," writes:

> Does anyone know if heating PC board etching solution (ferric oxide, I think)
> will make the etching process faster? Is there an optimum temperature? Can
> the used solution be restored by reversing the process?

One etchant that can be regenerated is copper chloride. I don't
know if it is still used commercially. As I recall, cupric chloride
gets reduced to cuprous chloride during the etching process. The
etchant is regenerated by bubbling air through it, to convert the
cuprous chloride back to cupric. You thus end up with more etchant
as time goes on. Presumably you have to add some hydrochloric acid
from time to time. It's over 30 years since I did any chemistry, so
the above is a bit hazy. With bubble etching the oxidation would be
continuous during the etching process. I keep meaning to try this.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

4034. Re: ISA Card DTMF Decoder Ne

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 10:17:39 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <788782659snz@lfheller.demon.co.uk>
Source record: 114873

> SM>I am looking for an ISA bus board which has DTMF encode/decode
> SM>capability with some buffering to use in a PC based repeater
> SM>control application.
>
> SM>Any suggestions of possible vendors appreciated
>
> SM>Steve Muther WF6R stevem@w6yx.stanford.edu

Sound cards using the Analog Devices ADSP-2115 DSP such as the Cardinal could be used for this. Analog provide DTMF encode/decode routines for the 21xx in their applications book, and PD development software for the Cardinal board is available.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

4035. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 14:54:13 UTC
From: zlau@arrl.org
Message-ID: <1994Dec30.145413.5143@arrl.org>
Source record: 114876

Zack Lau (KH6CP) (zlau@arrl.org) wrote:

: My first attempt at a quality design was the
: QRP Three Bander, published in the Oct 1990
: QST.

Sorry about that, it was October 1989, not 1990.
You can find it in the book QRP Classics published
by the ARRL. The bands are 17, 15, and 12M.

--
Zack Lau KH6CP/1 2 way QRP WAS
8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

4036. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 16:39:19 UTC
From: sfarmer@tulsa.com
Message-ID: <sfarmer-3012942139190001@tty18.com1.tulsa.com>
Source record: 114875

In article <1994Dec30.183325.18752@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) wrote:
[snip]
>
> Fair enough. I have a little rig built using the Motorola chips
> that I've been using for simpeater experiments, and I've already
> promised a FM ATV transmitter for 2.4 GHz that's a pretty simple
> design too. I'm still working on modifications and an outboard
> box for a Uniden BC 760XLT scanner to make it into a poor man's
> communications monitor. These are all pretty much connect the
> dots projects that work first time using off the shelf circuits
> and modules. There's no rocket science or wizardry in any of
> them, though I am pretty proud of the clamped AFC in the ATV
> transmitter. I haven't considered them worth submitting for
> publication since they seem so obvious. I guess it's time to
> document them and see if anyone wants to publish them.

Wouldn't packet be a good application for an inexpensive, easily built, crystal controlled transceiver? That would make the designs worth submitting for publication, wouldn't it? And while you are considering publication, remember that's exactly what you're doing every time you make a posting here: publishing. So, you should consider giving us the details here. I know that ascii pictograms can be exhausting for both author and audience, but if there aren't all that many dots in these connect-the-dots designs, maybe that would work. At least tell us the Motorola app note numbers.

Actually, it would be nice if we had some way to easily publish schematics in a forum like this. Postscript might be a candidate. There are several postscript viewers available for pc, mac and unix platforms. I honestly don't think that the resulting files would be all that large either, and since they're really just ascii text they could be posted, mailed, etc. Trouble is, short of writing each schematic as a postscript program by hand, how could you generate the darned things?

73 de wa5rpf

4037. Re: Tracking transmitter with a 20-30 mile range needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 17:30:55 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec30.173055.18189@ke4zv.atl.ga.us>
Source record: 114878
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <3dsbv5$ng@griffin.phoenix.net> "P. Garrison" <peg@phoenix.net> writes:
>I have an immediate need for a transmitter that can broadcast up to
>30 miles that is simple in design, few components and compact design.
>A single board computer will send a couple of bytes of information thru
>this transmitter. The target landscape that the transmitter will
>have to transmit thru is a flat city landscape with few high buildings.
>
>The two applications I have planned is a vehicular tracking transmission
>and a weather information beacon that is stationary on ground some
>30 miles from my home.

Paul, this can be a lot harder than it sounds at first. If you can arrange line of sight between the transmitter and receiver, most anything will do, but if you can't, this is an awkward distance to cover. For non-line of sight paths, a fair amount of power is going to be needed at VHF/UHF, or you're going to have to resort to HF groundwave, likely in the 160 meter or 80 meter range, and that's going to involve large antennas.

This is one of those cases where a high site repeater could really come to the rescue. You don't specify that this is an amateur radio project, but if it is, this sounds like a job for packet through a local high site node. If this is to be a non-ham project, you're likely in a world of hurt. None of the easily licensed telemetry frequencies are going to serve this distance well with simple equipment.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4038. Re: Weather broadcaster.

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 17:58:48 UTC
From: michael glidewell <glide@shore.net>
Message-ID: <3e1hoo$dhc@shore.shore.net>
Source record: 114877

shields@nps.navy.mil (Michael K. Shields) wrote:
>
> A while back I read somewhere about a HAM project that transmitted
> weather information from a ballon. I am interested in doing something similar,
> I want to put a transmitter atop several of the local mountains to transmit
> temperature, dewpoint, wind speed, and wind direction. I have two questions:
> First, is this leagal -- you are really broadcasting -- I thought about
> getting around the problem by making it a repeater, and when it gave its
> callsign, have it transmit the weather info as well, but this would complicate
> design.
> Second, does anyone have any pointers to designs for this type of equipment?
> Thanks.
> Mike Shields
> shields@nps.navy.mil

Comment:

I don't recall your refernce but I do remember All Electronics in Los Angeles selling a wetaher radio sonde very cheap. There were no specs but it was used by wx service. If you'r handy, you might be able to reverse engineer such an animal.

-mike

4039. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 18:33:25 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec30.183325.18752@ke4zv.atl.ga.us>
Source record: 114879

In article <sfarmer-2912941239240001@tty14.com1.tulsa.com> sfarmer@tulsa.com (Steven Farmer) writes:
>
>Here's an idea Gary: why don't you design, implement, debug
>and then publish a tranceiver (any band(s), any mode) using the
>simple "it's in one or two chips" approach you're always talking
>about. Then the rest of us could actually try it out to see if
>it flies. Short of that, all I can tell about your opinions on
>homebrewing at this point is that you're very generous with them.

:-)

Fair enough. I have a little rig built using the Motorola chips that I've been using for simpeater experiments, and I've already promised a FM ATV transmitter for 2.4 GHz that's a pretty simple design too. I'm still working on modifications and an outboard box for a Uniden BC 760XLT scanner to make it into a poor man's communications monitor. These are all pretty much connect the dots projects that work first time using off the shelf circuits and modules. There's no rocket science or wizardry in any of them, though I am pretty proud of the clamped AFC in the ATV transmitter. I haven't considered them worth submitting for publication since they seem so obvious. I guess it's time to document them and see if anyone wants to publish them.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4040. Re: I'm new

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 18:44:10 UTC
From: gary@ke4zv.atl.ga.us
Message-ID: <1994Dec30.184410.18959@ke4zv.atl.ga.us>
Source record: 114880

In article <1994Dec29.155616.1389@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:
>
>I've been sort of puzzled--why haven't we seen a lot
>of 2 meter FM transceiver designs if it as easy as
>Gary says it is? Admittedly, I find it more fun to
>work on high performance microwave gear, but I know
>this doesn't apply to most of the amateur community.
>After all, you don't have to pass a morse code test
>to design, build, and write up nifty projects :-).

Good question, surely I'm not the only one making connect
the dots radios out here. Perhaps it's because most amateurs
are spoiled by the Gameboy radios and don't think a simple
crystal controlled FM rig is worthy of comment. I seem to
recall reading about a bunch of them 15 or so years ago
when I/K/Y radios weren't on every belt.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | emory!kd4nc!ke4zv!gary
534 Shannon Way | Guaranteed! | gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244 | |

4041. Re: Tracking transmitter with a 20-30 mile range needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 19:45:15 UTC
From: mack@ncifcrf.gov
Message-ID: <D1n2vF.402@ncifcrf.gov>
Source record: 114883
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <1994Dec30.173055.18189@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>In article <3dsbv5$ng@griffin.phoenix.net> "P. Garrison" <peg@phoenix.net> writes:
>>I have an immediate need for a transmitter that can broadcast up to
>>30 miles that is simple in design, few components and compact design.
>>A single board computer will send a couple of bytes of information thru
>>this transmitter. The target landscape that the transmitter will
>>have to transmit thru is a flat city landscape with few high buildings.
>>
>>The two applications I have planned is a vehicular tracking transmission
>>and a weather information beacon that is stationary on ground some
>>30 miles from my home.
>

Do you know about the WB4APR automatic packet reporting system?
The mobile vehicle has a GPS receiver hooked to a TNC sending unconnected packets. The home site can track the mobile one on a computer screen which has a map of the area (available in PC and Mac versions). The TNC can ID with not only lat long but temperature or anything you can put into serial form.

Is this anything like you'd want?

Joe Mack
NA3T
mack@ncifcrf.gov

4042. HAMCOMM AND PACTOR.. .. HELP PLEASE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-30 23:32:40 UTC
From: paul.whatton@posnet.co.uk
Message-ID: <941231140004411@posnet.co.uk>
Source record: 114882

In a message of 29 Dec 94 Dinakar wrote to All:

D> I HAVE SUCCESSFULLY MADE HAMCOMM INTERFACE AND I USE IT FOR CW, RTTY AND
D> AMTOR. I WOULD LIKE TO KNOW WHETHER THIS INTERFACE CAN BE USED FOR
D> PACTOR. IF SO, WHAT SOFTWARE I SHOULD BE USING TO DO PACTOR. I WOULD
D> REALLY APPRECIATE IF SOMEONE POINT ME TO THE SOURCE OF SOFTWARE OR OTHER
D> ALTERNATIVES FOR PACTOR.

Hello Dinakar

The Hamcomm interface can be used for receive on Packet radio. Some
software called PKTMON allows monitoring of VHF packet radio using the
Hamcomm interface provided your PC os fast enough (386 or better). You
might also like to explore a program called SSTVFAX which allows the
Hamcomm interface to e used to receive & transmit, yeah you guessed, SSTV &
FAX.

The simplest packet radio transmit and receive set-up used is usually the
BAYCOM circuit which uses just a modem chip as a TNC.

73 de Paul G4DCV ... AmigaBee BBS 2:254/214 UK+ 81 695 5328 * Amiga Ham
radio file area *
--- Spot 1.3 #997
* Origin: Paul's Point off AmigaBee (2:254/214.6)

4043. Amateur satellites?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 01:46:49 UTC
From: Steve Kittelsen <sak1@delphi.com>
Message-ID: <Jc45o8h.sak1@delphi.com>
Source record: 114885

Is there a special group for amateur satellite users on usenet? I would like
to get information on the latest (oscar 20 and up) satellites, their
frequency and operating mode.
Has Dove (oscar 17) lower output power then usual the last few months? The
signal is weak, and telemetry is hard to copy on a vertical omni.
Please give any information where to go for the latest on amateur satellites.

Thanks.

```
**********************************************************************
* __/\__/\ Steve Kittelsen __________ *
* / /\ \ Rochester, New York \ / *
* I I I I " sak1@delphi.com " \ / *
* \ __\/__ / Open Your Mind \/ *
**********************************************************************
```

4044. Re: HAMCOMM AND PACTOR.. .. HELP PLEASE

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 02:42:42 UTC
From: freitag@bonsai.fernuni-hagen.de
Message-ID: <YKC1I0SX$7yN063yn@bonsai.fernuni-hagen.de>
Source record: 114881

In article <1994Dec29.111646.3434@muvms6>, Dinakar wrote:
> HELLO ALL:
>
> I HAVE SUCCESSFULLY MADE HAMCOMM INTERFACE AND I USE IT FOR CW, RTTY AND
> AMTOR. I WOULD LIKE TO KNOW WHETHER THIS INTERFACE CAN BE USED FOR
> PACTOR.

It can not be used for PACTOR.

IF SO, WHAT SOFTWARE I SHOULD BE USING TO DO PACTOR.

For using Pactor you should contact the producer of pactor.
There are some articles in cq-dl (german) or other
publications.

Robert

4045. UHF Dead on TH78A

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 02:43:43 UTC
From: vuckovic@flowbee.interaccess.com
Message-ID: <3e2ggv$14f@nntp.interaccess.com>
Source record: 114886
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

I've got a big problem...

The UHF side of my Kenwood TH78A will not transmit sub-audible tones (PL), touchtones, or any sounds from the mic. The VHF side will, without any problems. When I do key up on the UHF side, it opens up my other handheld's carrier squelch, but otherwise, that sucker is dead...

Any similiar problems and solutions that you've had, please e-mail back!

Thanks!

--

Owner, Weniger Lighting Systems | George Vuckovic |
| vuckovic@interaccess.com |
|__My_Opinions_Are_My_Own__|
Weniger Lighting Systems -- Emergency Lighting Sales, Service, Installation
---

4046. WANTED: Multimode TNC

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 04:49:00 UTC
From: darryl.linkow@grinder.org
Message-ID: <8A0A4E1.019E00043C.uuout@grinder.org>
Source record: 114887

N3MCX,

I tried leaving you Email at the address below, but the message got
kicked out. Something about not finding a user "TR1610" on
delphi.com. At any rate, here is the body of the message. Get
back to me via Email and please leave me a mailbox address that
will work!

To: TR1610@delphi.com

Subject: Re: WANTED: Multimode TNC
From: darryl.linkow@grinder.org (DARRYL LINKOW)

TR>Darryl,

TR>The software is "PC-PAKRATT for Windows" version 2.0. The everything else
TR>simply meant cables, manual, etc. Let me know.

Sorry, but I do a lot of messaging on Internet Email, and do not
remember what exactly what it is that you are selling! It
helps if you quote part of the previous message when replying to
someone on these nets. That being the case, would you be so kind
as to reply with the full description of the package that you are
selling? I am very interested in getting PC-PAKRATT for Windows
2.0 from you. Just let me know the what the rest is and I'm sure
we can work a deal.
73 de KE6IHA - Darryl

Email: darryl.linkow@ledge.com
OR
darryl.linkow@grinder.org
---
* OLX 2.2 * Darryl Linkow (818)346-5278 9 am - 5 pm PST

4047. Re: Homebrew printed circuits

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 06:00:21 UTC
From: PRAR08A@prodigy.com
Message-ID: <3e2s1l$4pb2@usenetp1.news.prodigy.com>
Source record: 114888

: special tranfer paper brands available. The real trick is in the iron-
down. It takes a bit of practice, but I
: even made two sided boards using this method.
: happy boarding!
James,
Thanks for the response but you refer to special transfer paper brands.
Are they available in local business copier supply houses? If you could
send me a brand name I would appreciate it.
thanks Dave de VE3SVL

4048. Re: Are single-chip ICs for RF Xmitter/Reveiver available?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 06:27:14 UTC
From: wnewkirk@bb.iu.net
Message-ID: <D1nwLE.DC0@zeno.fit.edu>
Source record: 114884
Cross-posted to: rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,sci.electronics

i would say to start, check out Motorola's offerings..

(i would think Delco would have some official contact with Moto on a formal basis...that means Delco should have something like a component applications engineering library just chock full of reference books from the suppliers....and probably tools for looking for parts that fit an application regardless of vendor.

just a thought.)

--

Bill Newkirk WB9IVR The Space Coast Amateur Technical Group
Melbourne, FL duty now for the future of amateur radio

4049. Re: Call FCC for "New" call signs!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 06:32:10 UTC
From: ribarbe@garlic.com
Message-ID: <3e2tta$10kj@garlic.com>
Source record: 114889

James W. Lynch (jwl@cray.com) wrote:
: Matthew R. Link (mrlink@nickel.ucs.indiana.edu) wrote:
: : I just talked to the ARRL today and found the phone number to call the
: : FCC to find out your "New" call sign.
: : Here goes:
: : 1-800-322-1117

: : They suggested that you wait about 3 weeks from the time you passed
: : your test until the time you call.

: Does this mean that a new ham can start operating without a license in
: hand as long as he has the C.S.C.E and knows his call?

Of course not. You have to have a signed original in possession.

--

GAT/MU 2.1 d---- H+ s+ g+6 au0 a19 w+++(--) v(---)>* | M:tG
C++++ UAS+++ P+ 3+ L+ E---- N+++(*) K+>+++++ | o
W--- M+$ V-- po--- Y+ t j--IRC G++(++++)>---->+++ | o o
b+++ B- e* u---* h!>++@ f* r++ n+ y-**$ | o o

http://garlic.com/~ribarbe/magic.html Sleight of Mind
fingerForTheePGPpublikKey

4050. Need 8 MFD 700 VDC Caps

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 15:53:35 UTC
From: carlhn@aol.com
Message-ID: <3e3upv$30l@newsbf02.news.aol.com>
Source record: 114890

Help I need a source for 2- 8 mfd 700 VDC xaps for the power supply of my
old novice rig, a Johnson Adventurer.
Does anybody have a source for these puppies ?
Thanks,
Carl
WA1KPD

4051. Filter Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 15:56:33 UTC
From: gary@vulcan.com
Message-ID: <ykJ8Xc1w165w@vulcan.com>
Source record: 114891

Hi,

A few days ago, someone posted an article mentioning the classic book on filter synthesis by Zverev. I priced the book a few years ago and it was $125 (US) then. Needless to say, I don't have a copy.

Anyway, the book apparently makes reference to a class of filters called 'Transitional Gaussian to 6 dB' and 'Transitional Gaussian to 12 dB'. I say 'apparently' because some of the Zverev tables are copied in the book 'Electronic Filter Design Handbook' by A. B. Williams. Does anyone know what a 'Gaussian' filter is ? Some references indicate that it is similar to -- but apparently not the same as -- a Bessel (Thomson) filter.

Supposedly, a 'Transitional Gaussian' filter resembles a Gaussian filter in the passband, but something else on the skirts. What type of filter does it represent there ?

Can anyone point me to a reference ? (Other than the Zverev book ?)

Thanks

Gary Tennyson
KO4CY

4052. Re: Tracking transmitter with a 20-30 mile range needed

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 16:41:46 UTC
From: Leon@lfheller.demon.co.uk
Message-ID: <788892106snz@lfheller.demon.co.uk>
Source record: 114899
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <3dsbv5$ng@griffin.phoenix.net> peg@phoenix.net "P. Garrison" writes:

> I have an immediate need for a transmitter that can broadcast up to
> 30 miles that is simple in design, few components and compact design.
> A single board computer will send a couple of bytes of information thru
> this transmitter. The target landscape that the transmitter will
> have to transmit thru is a flat city landscape with few high buildings.
>
> The two applications I have planned is a vehicular tracking transmission
> and a weather information beacon that is stationary on ground some
> 30 miles from my home.

Very simple systems exist for tracking animals over that sort of
distance. Unfortunately, they involve the use of a satellite.

Leon
--
Leon Heller | "Do not adjust your mind, there is
G1HSM | a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk | many years ago in Oxford.
Phone: +44 (01734) 266679 |

4053. Etching PC boards

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 18:07:00 UTC
From: tom.hammond@woodybbs.com
Message-ID: <93.4119.7584.0NFB8985@woodybbs.com>
Source record: 114902

GE>Does anyone know if heating PC board etching solution (ferric oxide,
I think will make the etching process faster? Is there an optimum
temperature? Can the used solution be restored by reversing the
process?

ABSOLUTELY!!!!!!!!!!!!! In fact, up to 10 times as fast!

Temparature? Oh, probably 100 degrees F will do quite nicely. I built
a spray etching tank out of a 5 gallon aquarium and used an old Pyrex
glass heating element out of a heating tray (serving tray with integral
heater) as the heater. I just set the glass bottom of the aquarium on
top of the Pyrex heating element with a SMALL amount of water BETWEEN
the two pieces of glass (to assist in heat conduction) and let 'er rip.
The heating element included its own preset thermostat, and it does a
very nice job of warming the gallon of etchant in the aquarium.... takes
about 15 mintues to warm, then I ready to 'play'.

Even with pretty well-used etchant, I can often squeeze out "just one
more" etching if I heat the etchant.

You can tell when the etchant is becoming pretty heavily laden with
copper... it will become almost 'think'... not really THICK, but it
won't splash as readily (or violently)... just not quite as viscous..
and certainly not nearly as transparent as the new stuff. Also, you'll
see a lot of precipitate in the bottom of the storage container.

FWIW, and according to our local Dept of Natural Resources, Hazardous
Waste Division, FeCl is NOT considered a hazardous waste and can be
disposed of in a conventional manner.

73 - Tom Hammond N0SS
* LAKOTA v1.4
--- Alexi/Mail 2.02b (#83)
* Origin: Distant Winds BBS * Jefferson City, Mo * [314] 635-7868 (1:289/67)

4054. Re: Quality Homebrew Designs

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 18:20:51 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <3e47e3$qfo@colossus.holonet.net>
Source record: 114892

WA5RPF wrote:

> Actually, it would be nice if we had some way to easily publish
> schematics in a forum like this. Postscript might be a candidate.
> There are several postscript viewers available for pc, mac and unix
> platforms. I honestly don't think that the resulting files would be
> all that large either, and since they're really just ascii text
> they could be posted, mailed, etc. Trouble is, short of writing
> each schematic as a postscript program by hand, how could you
> generate the darned things?
>

Use a drawing program, and then generate a PostScript file from the
printer driver if it lets you. Macs let you do this easily, and I would
presume Windoze and others. Sometimes the drawing program itself has a
PostScript generating option.

John Seboldt K0JD
Minneapolis, MN

4055. Re: Ramsey Electronics

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 18:27:14 UTC
From: rohrwerk@orac.holonet.net
Message-ID: <3e47q2$qnk@colossus.holonet.net>
Source record: 114893
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew

You basically get what you pay for with Ramsey stuff. If you're an adventurous troubleshooter, fine. If not, don't bother.

The 2 meter synthesized rig was reviewed in QST, and according to them didn't meet the minimum FCC spurious radiation requirements. There's a hint of what's in store for you.

John Seboldt K0JD
Minneapolis, MN

4056. Coaxial Cable Capacitors

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 19:07:00 UTC
From: demetre@helios.intranet.gr
Message-ID: <3e4a4k$als@helios.intranet.gr>
Source record: 114897
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

CQ Netters..

While going through the ARRL antenna book for construction plans
for a vertical HF multiband antenna, I read how a piece of coaxial
cable can be used instead of a capacitor in trap construction.
The book was not very clear on the attachment method of the cable
on the trap itself.

Q1: Can anyone tell me how to go about attaching the coax on the trap ??

Q2: If RG213 is used, how much RF can be used safely ??

Q3: Has anyone succesfully created a 80 meter capacitance hat ??

Please reply via e-mail...

73's and a happy new year...

demetre@intranet.gr

4057. NEW YEAR'S #1

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 19:39:51 UTC
From: bb268@yfn.ysu.edu
Message-ID: <3e4c27$8l3@news.ysu.edu>
Source record: 114895

Hey! I'm writing from Michigan, and am wondering something. What
was the #1 most requested or played song of the year in your part
of the country? Please reply personally. Any info you can give
me will be helpful. Please state where you're from, and what kind of
station you got this info from. Thanks.
--

Jason Lynch	Remember the rules of
AB604@DETROIT.FREENET.ORG	Computer Repair:
BB268@YFN2.YSU.EDU	One hit is maintenance, Two is abuse

4058. Re: Filter Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 19:40:03 UTC
From: stevem@w6yx.stanford.edu
Message-ID: <3e4c2j$l1o@nntp.Stanford.EDU>
Source record: 114894

In article <ykJ8Xc1w165w@vulcan.com> gary@vulcan.com (Gary Tennyson) writes:
>
>
>Anyway, the book apparently makes reference to a class of filters called
>'Transitional Gaussian to 6 dB' and 'Transitional Gaussian to 12 dB'. I
>say 'apparently' because some of the Zverev tables are copied in the book
>'Electronic Filter Design Handbook' by A. B. Williams. Does anyone know
>what a 'Gaussian' filter is ? Some references indicate that it is
>similar to -- but apparently not the same as -- a Bessel (Thomson)
>filter.
>
>Supposedly, a 'Transitional Gaussian' filter resembles a Gaussian filter
>in the passband, but something else on the skirts. What type of filter
>does it represent there ?
>
>Can anyone point me to a reference ? (Other than the Zverev book ?)
>
>Thanks
>
>Gary Tennyson
>KO4CY

I understand Gaussian refers to not so much to the frequency response
of the filter, but to its impulse response. The amplitude decay of
the 6 and 12dB transitional filters approaches that of a true Gaussian
shape.

These filters are used to shape the transmitted eye pattern in a GMSK
(Gaussian Minimum Shift Keying) transmitter, for example. Rather
than applying the serial bitstream (square waves) to an FM modulater,
it is applied to a Gaussian low pass filter which removes the high
frequency components from the data pattern thus reducing the occupied
bandwidth of the transmitted signal.

I believe Williams wrote some articles on Gaussian filters complete
with tables. Why these tables never appeared in his excellent book,
I'm not sure. I will look for the article when I return to work after
the holiday.

Steve Muther Stevem@w6yx.stanford.edu WF6R

4059. Re: Filter Design

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 19:48:55 UTC
From: dmiller@crl.com
Message-ID: <3e4cj7$4uh@crl7.crl.com>
Source record: 114896

Gary Tennyson (gary@vulcan.com) wrote:
: Hi,

: A few days ago, someone posted an article mentioning the classic
: book on filter synthesis by Zverev. I priced the book a few years ago
: and it was $125 (US) then. Needless to say, I don't have a copy.

About 5 years ago, it was $100. It had been out of print for quite a while, but suddenly became available again. I snapped one up. I figured that once I become old and too senile to practice engineering, there will still be lots of young engineers begging for such a reference -- the way they seek out Terman today (anybody got a copy they want to let go of for a *reasonable* price?). Good technical references cost major bucks when new: sometimes ya just gotta bit the bullet if you can't find them used. The college crowd is spending $100 each for some of their textbooks nowadays...

Sidebar:

The Zverev book was written while the Author was under the employ of Westinghouse Electric back in the days when computer time was *very* expensive. Of course, most of the tables were generated by computer. Some of the filter tables were easily generated (i.e. Tchebychev and Butterworth lowpass) with closed form calculations, but others required computer optimization of the pole and zero locations, which of course was time consuming, given the computer power available at the time.

It is said (I don't know if this is true) that the total revenue from the book to date is less than the value of the computer time used to generate it. If you ever buy this book, think of it as a gift from Westinghouse!

: Anyway, the book apparently makes reference to a class of filters called
: 'Transitional Gaussian to 6 dB' and 'Transitional Gaussian to 12 dB'. I
: say 'apparently' because some of the Zverev tables are copied in the book
: 'Electronic Filter Design Handbook' by A. B. Williams. Does anyone know
: what a 'Gaussian' filter is ? Some references indicate that it is
: similar to -- but apparently not the same as -- a Bessel (Thomson)
: filter.

I am not an expert on Gaussian filters, but I think that the term "Gaussian" is probably more general than "Bessel". Both have smooth, lazy roll-offs, but the poles and zeros of the Bessel filter satisfy some mathematical constraint. I think the term "Gaussian" just describes the shape. The time-domain and frequency-domain behaviors of a filter are not independant. These non-brickwall filters have good group-delay performance-- this is

what the wimpy shape buys you.

: Supposedly, a 'Transitional Gaussian' filter resembles a Gaussian filter
: in the passband, but something else on the skirts. What type of filter
: does it represent there ?

Tchebychev in the stopband. Often, the shape factor of a gaussian filter
just won't cut it in many applications, so you compromise. You design
a filter with the poles and zeros arranged so as to produce a response
that looks gaussian to a certain point, then breaks away with a stopband
that looks more like a Tchebychev. Many times one needs to use an
optimizer to design these filters. Zverev tabulates gaussian to 6 and 12
dB, but you can realize filters with the breakpoint about anywhere you
want it -- you just trade off group delay performace for a pretty stop-band.

My book is at the office, so I don't have it handy right now, but I believe
that the actual Zverev text on this subject is not much more in depth than
what I just told you. He *does* however, give the shape equation for an
ideal gaussian, which is useful if you want to optimize your own transitional
filter.

Have fun,

--

Don Miller My opinions are my own!
dmiller@crl.com

4060. Re: 900 MHz Cordless phone FAQ ?

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 20:15:08 UTC
From: edw@sequent.com
Message-ID: <1994Dec31.201508.185@sequent.com>
Source record: 114898

In article <3ddlo1$kn5@wariat.wariat.org>,
Ray Gannon <gannonr@wariat.org> wrote:
> Where might I find a FAQ on these little wonders ? I'm thinking about
>buying a 900Mhz cordless phone in the near future and there really seems to be
>a lot of brands available. Any information comparing these units would be much
>apreciated.

Try the anon ftp site rtfm@mit.edu
HONEST !
Full of FAQs and other things.
Whoever named it has my undieing respect and laughter.

73
Ed
--
I think I've got the hang of it now .... :w :q :wq :wq! ^d X exit ^X^C ~.
^[x X Q :quitbye CtrlAltDel ~~q :~q logout save/quit :!QUIT ^[zz ^[ZZ
ZZZZ ^H ^@ ^L ^[c $q ^# ^E ^X ^I ^T ? help helpquit ^D ^d ^C ^c help
^]q exit ?Quit ?q \qy \xyy F.M.H.! YMHAOS edw@sequent.COM KA9AHQ 28.340

4061. The Amateur Radio INTERNET BBS!

Newsgroup: rec.radio.amateur.homebrew
Date: 1994-12-31 21:55:06 UTC
From: howardl@wb3ffv.ampr.org
Message-ID: <D1p3Ju.BH6@wb3ffv.ampr.org>
Source record: 114901
Cross-posted to: rec.radio.amateur.digital.misc,rec.radio.amateur.misc,rec.radio.amateur.homebrew,rec.radio.amateur.equipment, rec.radio.amateur.antenna

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+-------------------------------------------------------------------------+
HOW TO ACCESS THE WB3FFV AMATEUR RADIO INTERNET BBS !!!

I have placed a BBS system on-line that is mainly oriented towards the
Amateur Community (but there are plenty of other wares on-line). Through
user support I hope to keep the latest and greatest ham software on-line.
The BBS also offers access to nearly all of the Internet (USENET) NetNews
groups, plus access to most Internet services such as Email, FTP, TELNET,
Gopher, WWW, Callsign Lookup, Etc... Below is the information that is
needed in order to access the BBS via Telephone, Telnet, or FTP. Please
pass it around to as many ham's as possible.

System Name: WB3FFV
User Login: bbs

410-661-2475 - 12/24/48/96/14.4/16.8/19.2/21.6/28.8
(V.32bis,V.32terbo,V.34,V.FC,HST,V.42bis)

410-661-2648 - 1200/2400/4800/9600/14400/23000
(MNP2-5, V.32bis, V.42bis, Turbo-PEP)

TELNET/FTP - wb3ffv1.sed.csc.com (20.2.1.80)

Data Settings: 8 Bits, NO Parity, 1 Stop Bit
Times: 24hrs/365days (except for routine maintenance)
Software: UniBoard UNIX BBS Software (Version 1.30b)
Misc. Info: Machine is an Pentium-90/MP running UNIX System V Release 4.2
and features more than 4 Gigabytes of on-line file storage.
Most transfer protocols are available!! (5 phone lines)

I attempt to keep the latest and greatest HAM software on-line, and encourage
all to upload anything new that they come up with, as it is of benefit to all.
Here is a sample of a couple pieces of software that is available for DOWNLOAD:

KA9Q TCP/IP Software for the PC (Latest OFFICIAL release + TEST Versions)
KA9Q TCP/IP for the Atari-ST, MAC, & Amiga
KA9Q TCP/IP for UNIX based systems
KA9Q TCP/IP (The NOS release) [UNIX, MS/DOS, Amiga]
KA9Q TCP/IP (Version by G1EMM, PE1CHL, PA0GRI, Etc.)
N2GTE Packet Message Switch [GTEPMS]
WA7MBL BBS for the PC
W0RLI BBS for the PC
MSYS BBS for the PC running KISS TNC's
AA4RE BBS for the PC (plus BETA versions)
F6FBB BBS for the PC
```

G8BPQ PC-Node (Version 4.08)
Various BBS utilities and enhancements
Several MORSE CODE Tutors
TheNet software by NORD><LINK
Modifications for many HAM Rigs and Scanners
Digital Signal Processing software (DSP)
DX and contesting programs

If you are interested in using UUCP to connect to the BBS, this can also be done as I support Anon-uucp. The login to the system is 'uucpanon', and there is NO password. The listing of avalible archives are stored in a file called 'FILES', and it is located in the /var/spool/uucppublic. To retrieve the files listing just use the following command:

uucp wb3ffv!~/FILES /usr/spool/uucppublic (ASCII Text)
-or-
uucp wb3ffv!~/FILES.Z /usr/spool/uucppublic (16-Bit Compressed)
-or-
uucp wb3ffv!~/FILES.gz /usr/spool/uucppublic (GNU Gzipped)

This will move a copy of my files listing into your uucppublic directory.

If you want to access the BBS via Telnet all you have to do is TELNET to wb3ffv1.sed.csc.com, and login is 'bbs' with no password required. To use anonymous FTP just ftp to wb3ffv1.sed.csc.com and login as 'anonymous'. This system is currently attached to the Internet via a dialup SLIP link, and should generally be available 24hrs, but at times the modem will drop the line. Also since this isn't the fastest link, I will be limiting the maximum number of anonymous sessions for the moment.

If you have any questions or problems, feel free to contact me at one of the numbers/adresses below. Good Luck...

Internet : howardl@wb3ffv.ampr.org | Howard D. Leadmon
UUCP : wb3ffv!howardl | Advanced Business Solutions
PHONE : (410)-661-0447 | 4107 Martin Avenue
FAX : (410)-661-0644 | Baltimore, MD 21236
PACKET : WB3FFV @ WB3FFV.MD.USA.NA |